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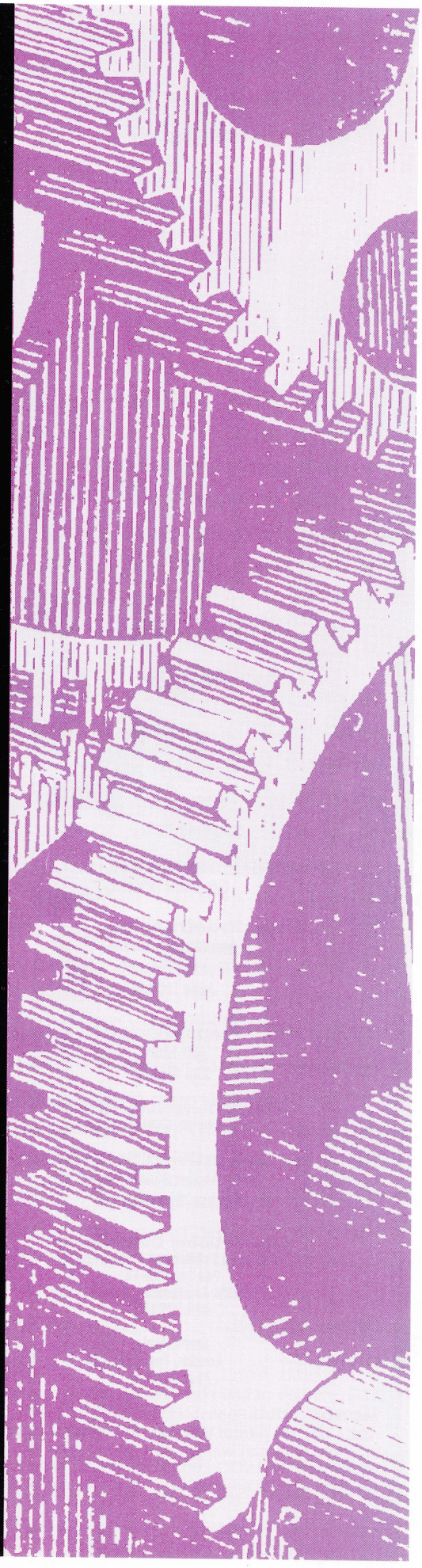
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Just in case
you wanted to know about the cover

The photograph of Deborah Harry is by Bart Nagel and Heide Foley. The Trifid Nebula and the Eagle Nebula were photographed by Tony Hallas and Daphne Mount. The three images were assembled in Adobe's Photoshop by Mark Landman, who also provided endless design assistance and made lunch to boot.
The original MONDO 2000 nameplate was designed by L.A.'s Brummbär for issue #1. It was beautifully refined by Oakland's Wolfgang Gersch for issue #2. Here it has undergone a further transformation under the wizard hands of Mitch Prater of Pixar. Using an as-yet-unreleased modeling program by Duane Maxwell, Mitch constructed our nameplate as three-dimensional objects, which were then textured and shaded in three easy-to-follow steps using Pixar's Renderman.

FURTHER GRATITUDE:
Thanks to James Grauerholz of Burroughs Communications and Island Records for permission to use still frames from the video "A Thanksgiving Prayer" written by William S. Burroughs and directed by Gus van Sant in 1990. Concept for MONDO 2000 by Stephen Beck who grabbed the frames off the Island video. Constance Lawrence, Sherman L. Kennedy Jr. and Louise Ledeen generated transparencies using a Samurai Film Recorder with a Diaquest Animation Controller and an IBM 386 with 32 bit Targa Graphics card.

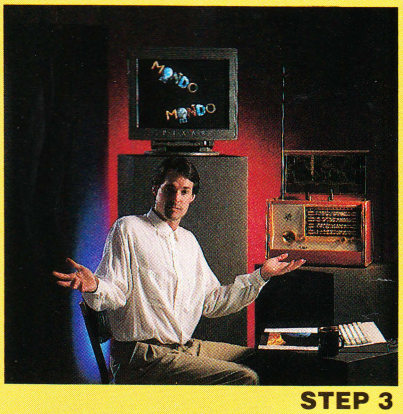
Photo on end page by Stephanie Rausser: "Full Moon in Prague," September 1990.



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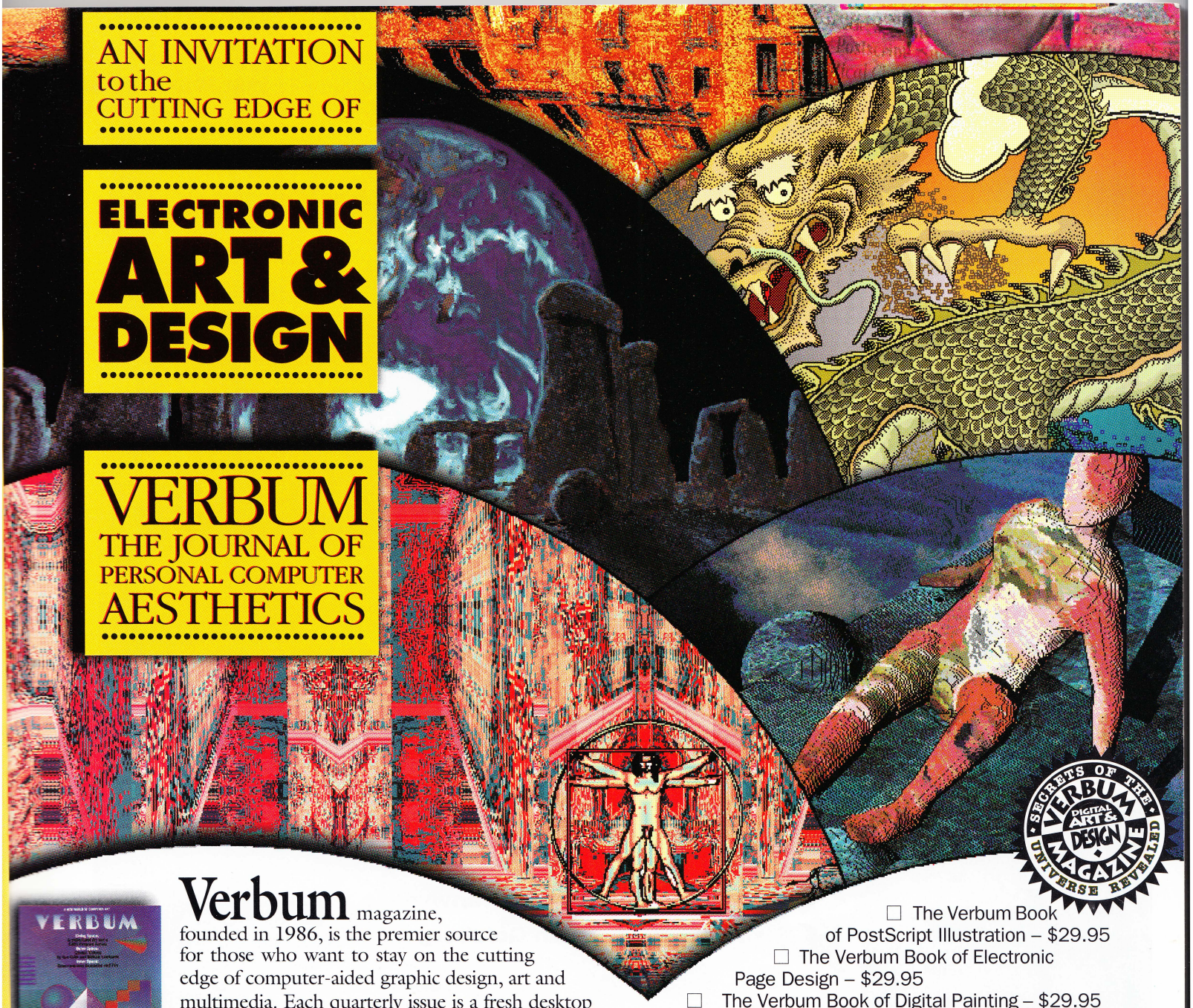
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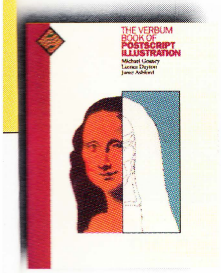
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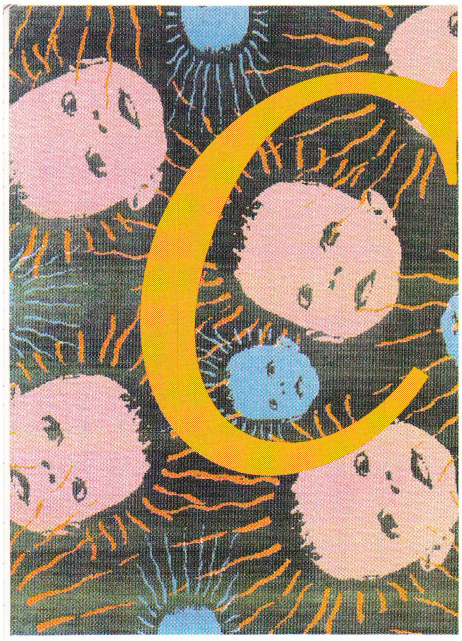
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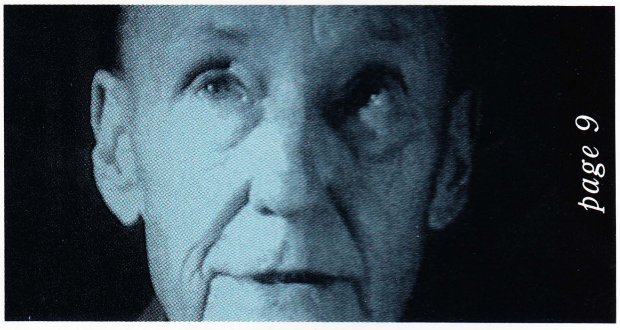
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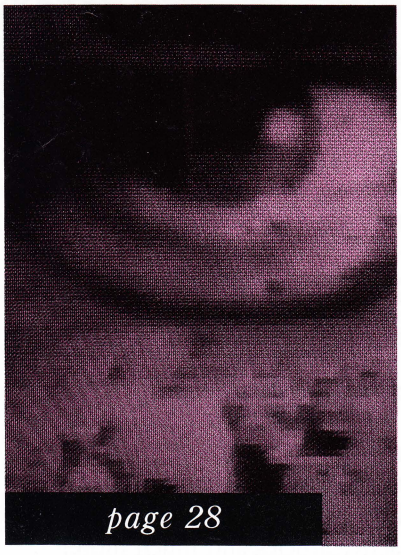
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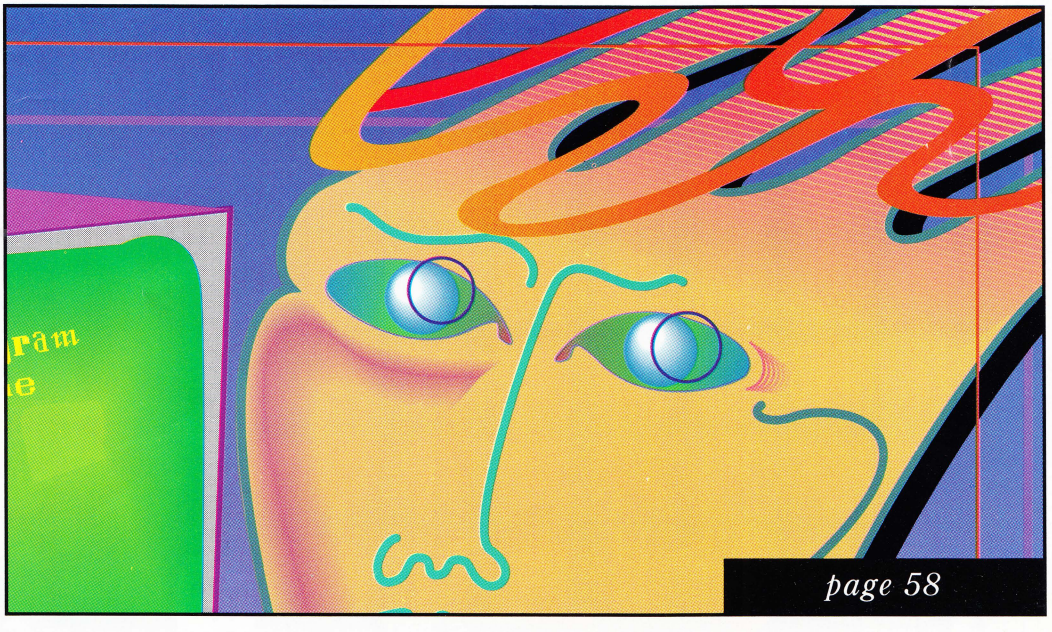




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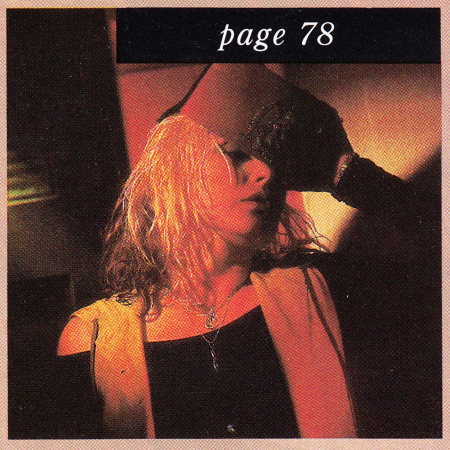
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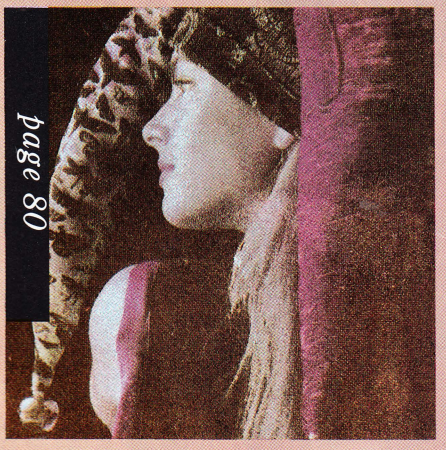
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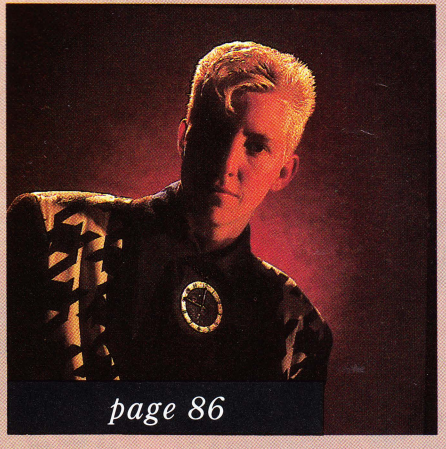
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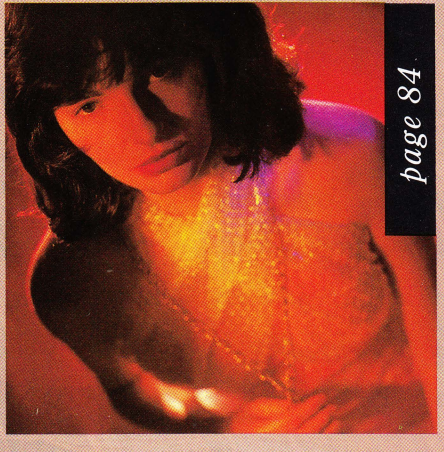
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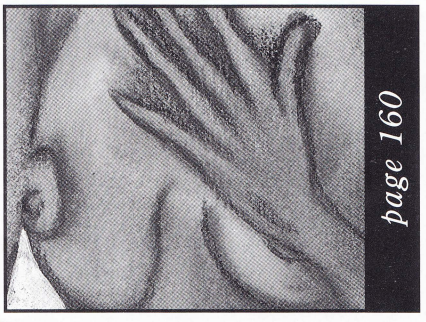
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Leonardo is the quarterly journal of the International Society for the Arts, Sciences and Technology (ISAST).

Computer Art in Context

Guest Editor: Mark Resch
Computer Curriculum Corp.

This special issue of *Leonardo* includes 73 color plates of the juried entries to the SIGGRAPH 1989 Art Show. Artists include Robert Mallary, Barbara Nessim, Manfred Mohr, Kenneth Snelson, Colette and Charles Bangert, Luz Bueno, and 50 others. Also in this issue, international scholars, computer graphics engineers and artists examine the state of computer art within historical, theoretical and technical contexts. Authors include Patric Prince, Benoit Mandelbrot, Donna Cox, Herbert Franke, Mihai Nadin, and others.

Electronic Art

Leonardo Supplemental Issue

This companion to the First Int'l Symposium on Electronic Art held in Utrecht, the Netherlands, addresses topics in computer music, animation and graphics. Authors include Adriano Abbado, Brian Evans, Henry Flurry, David Rosenboom, Mathias Fuchs, Philippe Menard, Michel Naranjo and Edward Zajec.

Visual Art, Mathematics and Computers

Selections from Leonardo
Edited by Frank J. Malina

A seminal reference book documenting the origins of computer art. Includes articles by Herbert Franke, Lancelot Law Whyte, Rudolf Arnheim, Jacques Monod, Stanley Hayter, Fred Whipple, Vera Molnar, and Anthony Hill.

Digital Image/Digital Cinema

Guest Editor: Tom Linehan
Visualization Laboratory, College of Architecture, Texas A&M University

The 1990 SIGGRAPH Art Show catalog highlights over 70 color plates of the juried entries to the show. Also presented are essays that address computer graphics and animation as a new media for the fine arts, along with articles by curators of previous SIGGRAPH art shows. Authors include Rudolf Arnheim, Michael Ester, Brian Evans, Timothy Binkley, John Berton and others. Available 1 August 1990.

The Fine Art, Science and Technology Database (F.A.S.T.)

The F.A.S.T. database includes art and music related bulletin boards, directories of resources, calendars of events and job opportunities. F.A.S.T. is accessible on MCI and ACEN on the WELL.

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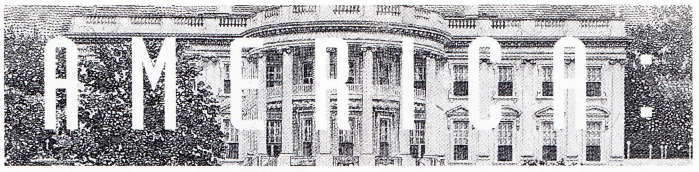
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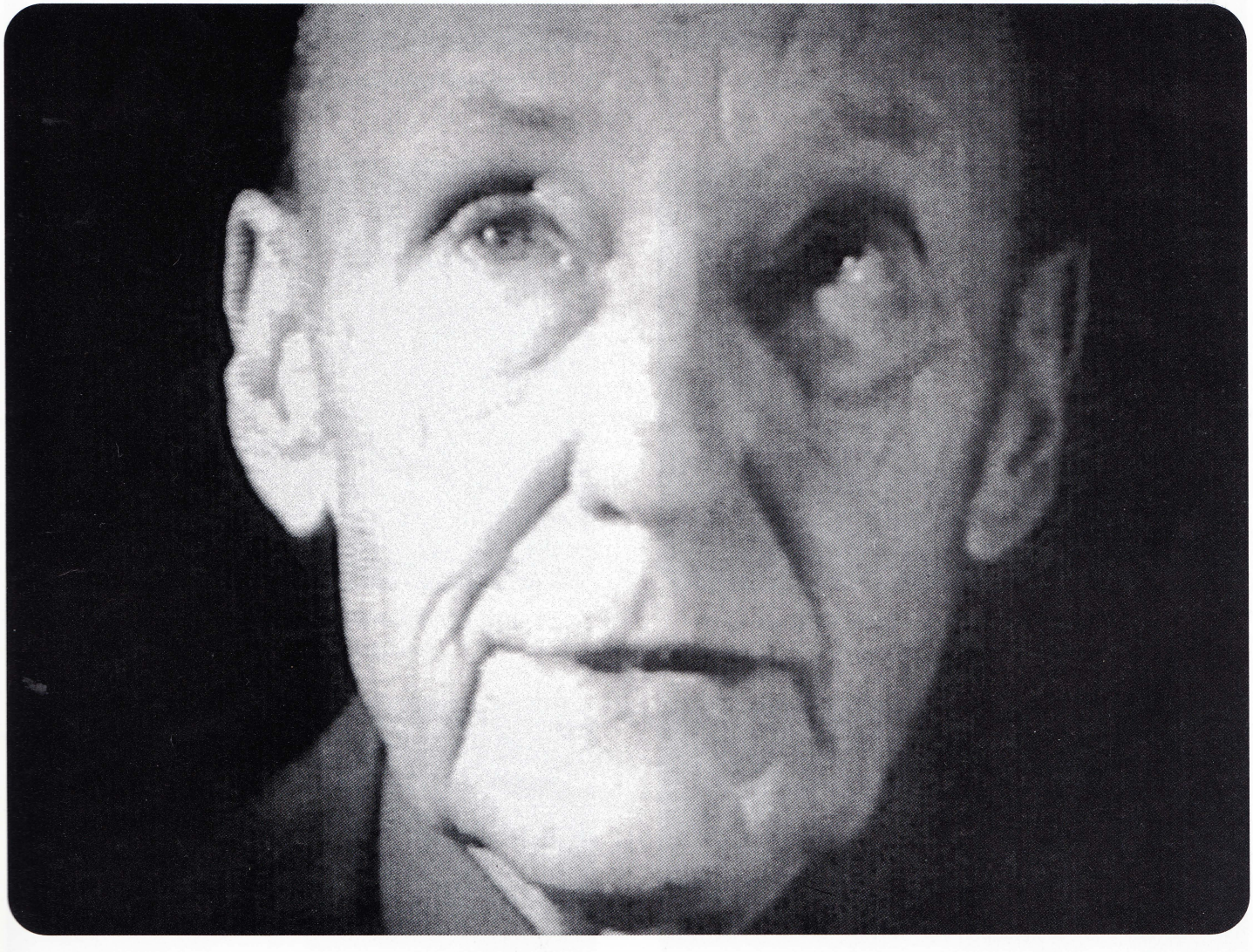
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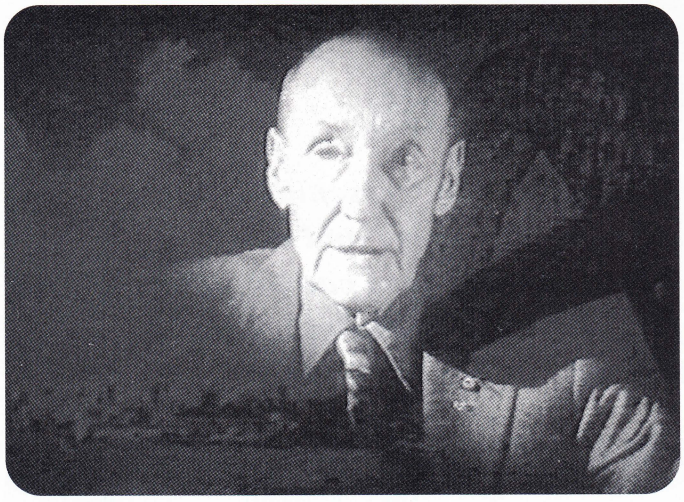


It is a world completely rotten with wealth, power, senility, indifference, puritanism and mental hygiene, poverty and waste, technological futility and aimless violence. . . . and yet I cannot help but feel it has about it something of the dawning of the universe.
—Jean Baudrillard

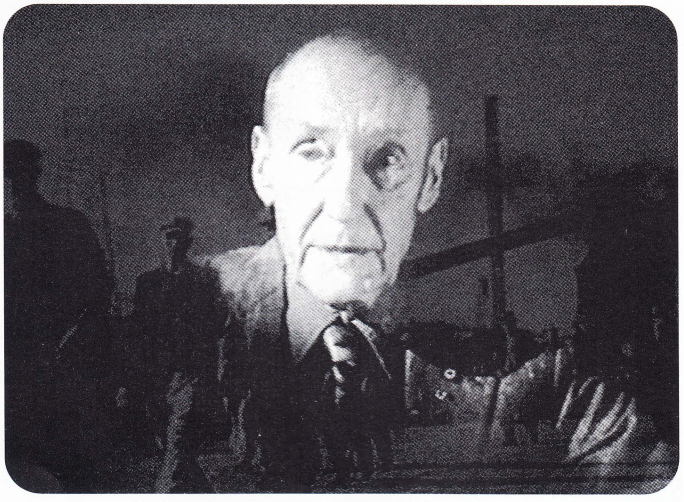


A Thanksgiving Prayer

by William S. Burroughs



Thanks for the wild turkey and the passenger pigeons, destined to be shit out through wholesome American guts.



Thanks for a continent to despoil and poison.



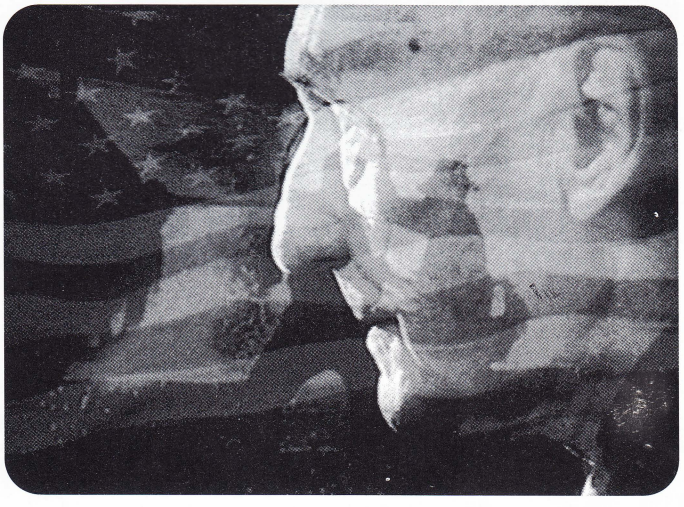
Thanks for Indians to provide a modicum of challenge and danger.



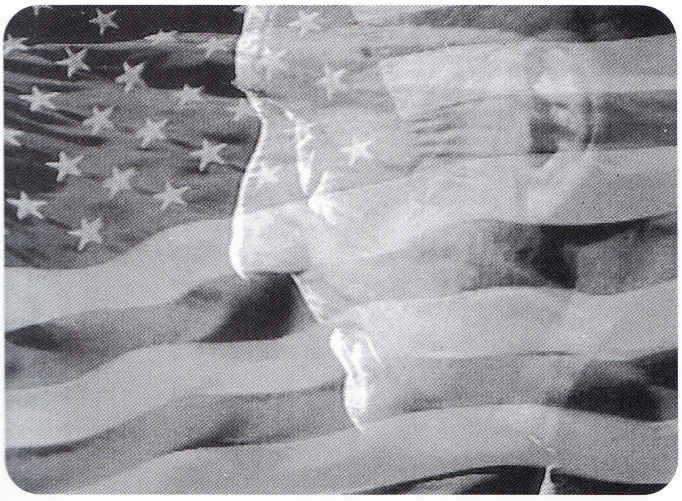
Thanks for vast herds of bison to kill and skin leaving the carcasses to rot.



Thanks for bounties on wolves and coyotes.



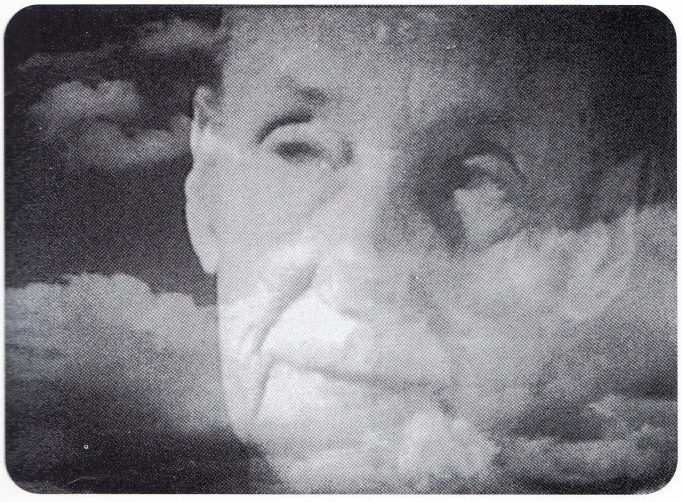
Thanks for the American dream,



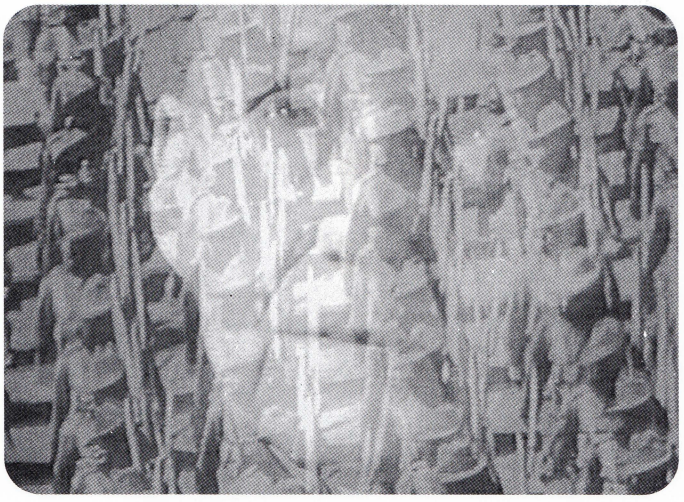
to vulgarize and falsify until the bare lies shine through.



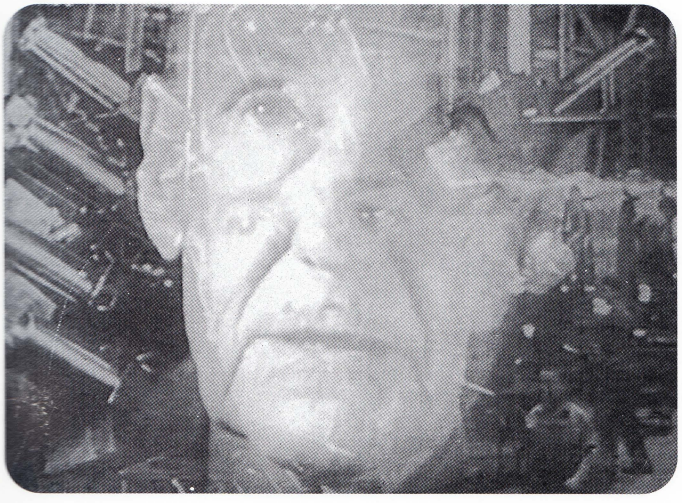
Thanks for the KKK.



For nigger-killin' lawmen, feelin' their notches



For decent, church-goin' women



with their mean, pinched, bitter, evil faces.



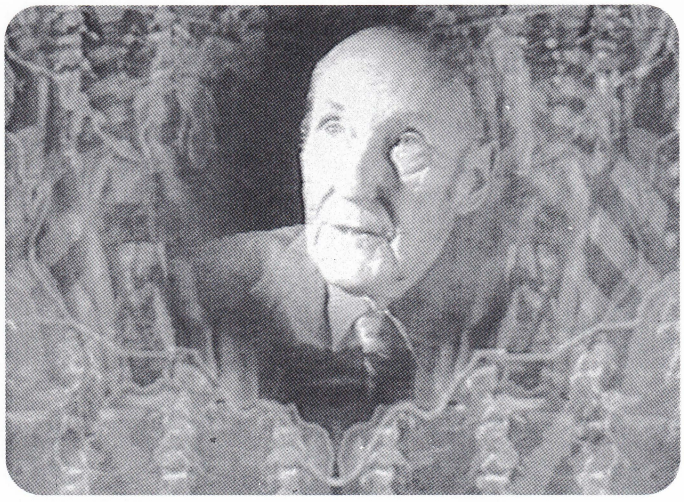
Thanks for "Kill a Queer for Christ" stickers.



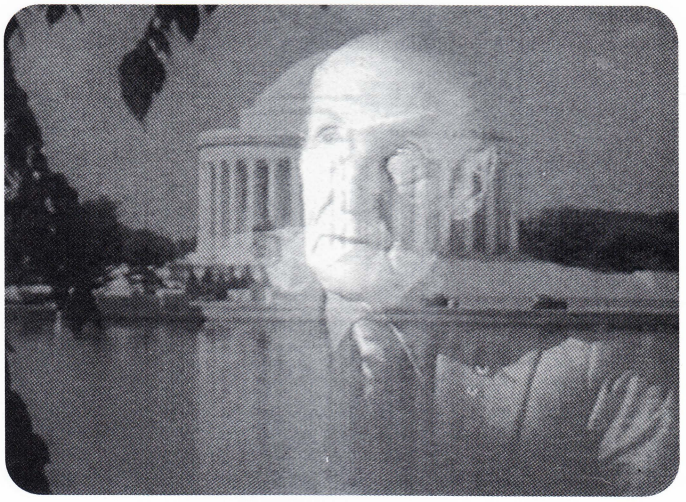
Thanks for laboratory AIDS.



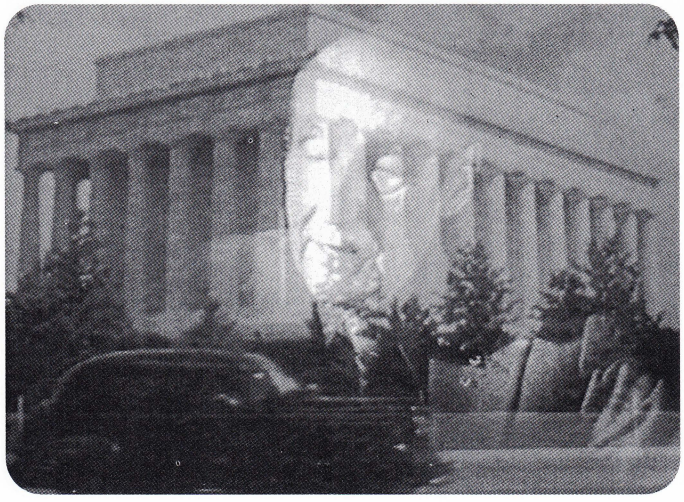
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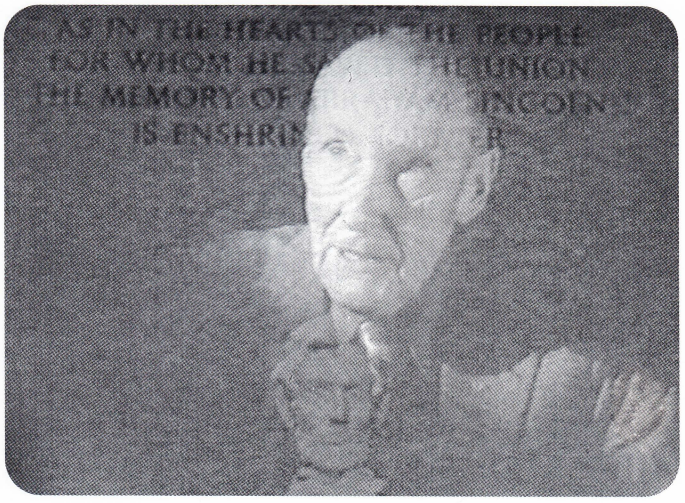
and the war against drugs.



Thanks for a country



where nobody's allowed to mind their own business.



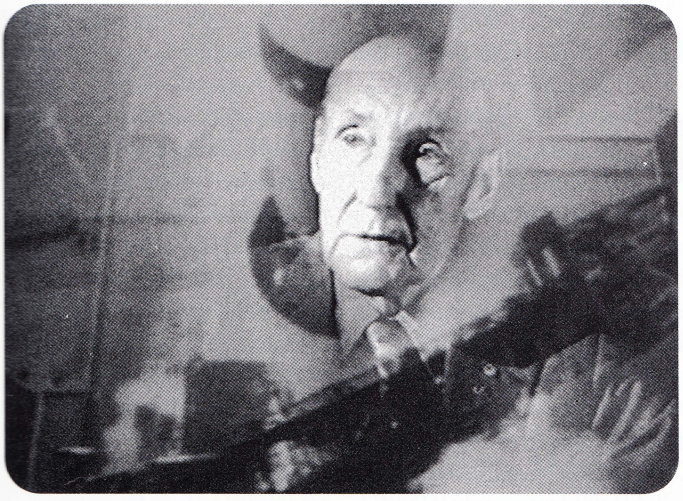
Thanks for a nation of finks.



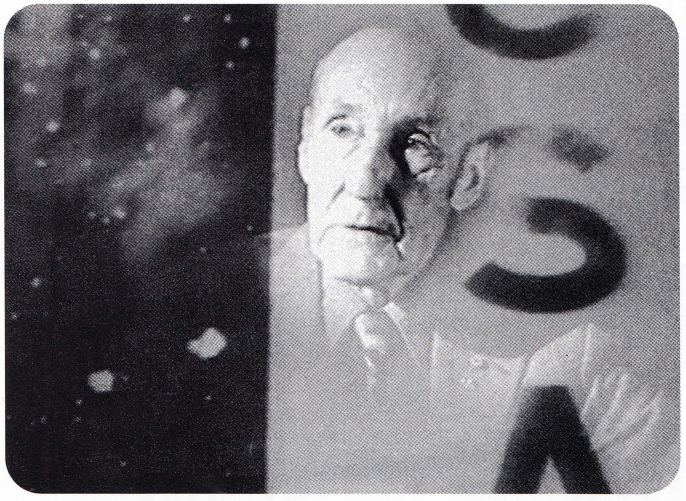
Yes, thanks for all the memories—



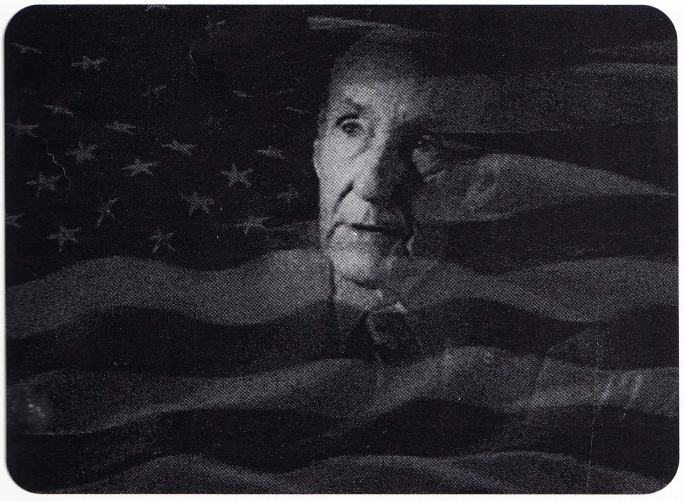
all right let's see your arms!



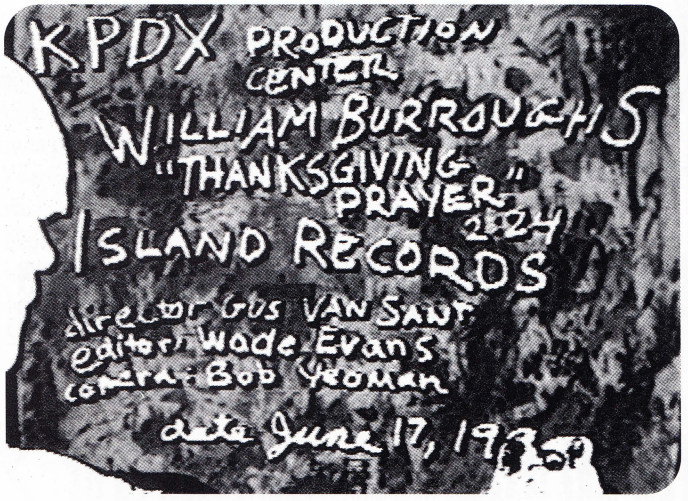
you always *were a headache and you* always *were a bore.*



Thanks for the last and greatest betrayal



of the last and greatest of human dreams.



Letters/FAX/E-Mail



Dear Mondoids,

Great that you could help us information hackers down here in South Africa. Things are probably a lot more simple in our country than yours—recent events such as a march on the South Africa Broadcasting Corporation SABC, demanding that they free the airwaves will recall similar events in the 60's USA. Our brains have stagnated in a cultural wilderness which has more in common with your local totalitarian bananastate than the subtle manipulations of western 'democracy.' Anyway, I mean 'simple' in the sense that two thirds of our population has no electricity. Solution = give them electricity. Our country produces 60% of Africa's electric output so there is more than enough. But here's where you people are important: to achieve any of the seemingly simple goals of basic human rights we need to know how to hack information really well. High tech has the capability of processing and transmitting large amounts of info, a characteristic that the security branch and Dept. for Information found really useful in tracking down radicals. Example: in one case someone on the run used his Autobank ATM card—it was promptly swallowed and when he enquired as to the reason at his local friendly bank—he was promptly arrested—yes, they actually programmed the ATM to trap those in the underground. Now activists have realized that to counter such a monopoly on tech-know-how and manipulation, they have to become techno-radicals, hackers of the establishments of knowledge, etc. We're working with a group of former teachers who have been given computers by the government in 1985 to appease the local community (a rather pathetic attempt) who then subsequently decided to use those 'gifts' against the very people who had given them—by radicalizing computers and spreading this knowledge. We have made copies of your very relevant mag and distributed to those individuals able to carry out hacking attempts. You're important players in the process of spreading the hacking ethic via the print media—something which should not be underestimated, especially in a

country such as ours where merely being able ro read is in itself a revolutionary act. The Kagenna project is one which has attempted to use this ethic—by letting information loose into a stagnant society—anything can happen. The green hue is both important and convenient —in a country of many barriers, it is one of the few topics which cuts across all prejudices of race and class. We probably seem pretty tame to you folks, but in the absence of independent media, we tread a fine line. So if you keep sending us the *MONDO*s, we will send Kagenna plus updates on hacking here and any interesting info we come across—let us know whether this is fine with you. We await the birth of the African Cyberpunk Hacker Movement —a somewhat difficult labour.

yours in solidarity,
Ted Head (kagenna technopeasant)
PO box 4713,
Cape Town 8000
New South Africa

We include an address so that those interested in helping will be encouraged to get in touch. ed.

Howdy, hyper-hipsters!

I'm a wet-eared, dreamy-eyed neophyte here on the barren (and less overtly cool) steppes of Texasville. After a second (and wonderfully caloric) helping of *MONDO*, I'd like to ask if you've noticed that some of the late-breaking technological insights bear remarkable structural similarities to our old, dog-eared mythologies (eg: Chris Langton-life is transition between order and chaos echoing the Chinese Yellow Emperor stories). Seems to me that the ancients were quite elegant in their use of a variant fractal process for describing reality systems in incredibly compacted form without the use of computational methods of any sort. I keep thinking of the fantastic compression ratios that mnemonics allow our own storage systems to execute.

Also, is anyone else getting the impression that no matter what our field of study, the more complexity you search for, the more complexity there is to be found? Is reality-hacking merely a linear discovery process, or are we creating a new "reality envelope" upon the impetus of every new question—somehow painting the scenery a half-blink before we get around the corner to look at it? Radical architect Paolo Soleri suggests that we (and all living matter) are in the process of backing up the evolutionary ladder—with the legends of Atlantean gods (or omnipotent mitochondria) as the genetic ideal we're evolving towards. Which comes first, the hacker or the hacked?

John DeMigalt
Houstonburg, Texas

Dear R. U.,

Cyberspace obviously is a Big Deal, but the various commentators in issue #2 seem to assume that Joe and Joan Average are as creative and self-motivated as the VR pioneers. Most people, I think, would really rather passively consume canned entertainments than expend the energy to design their own. Hell, the average working stiff doesn't have the time to program an artificial reality, and would rather consume some slick Hollywood production anyway. Indeed, the clash between the television networks and the motion picture companies in the canned VR market should be interesting to watch. Pre-packaging realities —*à la* the film *Brainstorm*—will become an industry in itself.

Look at the categories in a video rental store—action, romance, comedy, horror, sci-fi, classics, adult, and children's—and you can see where most people feel comfortable spending their "virtual" time. McLuhan said that each new medium takes as its content the previous medium, so today's video fare is likely to occupy tomorrow's virtual spaces. To the extent that cable TV has conditioned us to "browse," we will want to browse through dozens of virtual realities as readily as we do through dozens of cable stations. For all the virtues of virtual reality, most of which probably haven't been anticipated yet, I'm afraid VR's unintended side effects will include the cultivation of more couch potatoes than even television can pack into its bumper crops.

As for nanotechnology, it seems that the advocates always describe the nanobugs as pre-programmed to perform specialized functions. Has anyone considered general-purpose nanobugs that could perform any number of functions as directed by broadcast instructions? Actions performed in a VR could be broadcast to a swarm of nanobugs in the same way that NASA hopes to broadcast actions performed by astronauts in VRs to robots working in space.

Best wishes for continued success,
Ken Jopp
St. Paul, MN

Really enjoyed the cyberspace issue, although I have some real problems with the choice of Jaron Lanier as the primary spokesperson. As a former member of the World Future Society, I developed the habit of trying to be as comprehensive as possible in identifying the different forces that would support, shape, or oppose the implementation of new technology. This is a fundamentally different role than evangelizing a new technology, as was made painfully evident by Jaron during a presentation I saw him give recently in Seattle. At the end of the presentation, I got a chance to ask him some of the questions I had been considering about Virtual Reality (VR).

1: I was interested in the idea of "force feedback." The current system from VPL provides for the tactile hallucination of fingertip pressure. When I asked Jaron about creating devices that would give the illusion of real solid objects able to resist hand closing and seeming to have weight, he replied that such shape feedback is a very complex process and would be very hard to duplicate in VR. I pressed the issue by pointing out that it would be a very desirable capability and there would be enormous interest in and support for its development. Then Jaron said that it wouldn't be a good idea because someone could be hurt by a malfunction, and that his company would never work on such a feature. It seems to me that this is a matter of safety in design and not impossible to deal with. There are many important applications of VR that would be difficult or impossible without force feedback, such as physical rehabilitation, sports training, physical job training, and telepresence.

2: After the formal presentation, I asked Jaron about what I call "Overlay Reality." Earlier he had talked about importing "real world" objects into VR. I'm interested in

exporting virtual objects into reality. With transparent screens mounted in front of the eyes, objects could be presented in your field of vision as if they really existed. How about a pull-down menu that could pop up in your field of vision and that you could select from by touching the choices with your finger in a data glove? How about driving down the freeway and seeing a giant, green, blinking arrow pointing to the best exit to take for your intended destination? Jaron was not particularly interested and just remarked that there are a lot of technical problems involved in the interaction of actual objects with virtual objects.

In all the discussion that morning, it was assumed that virtual reality would always be constructed explicitly by the human operator. I asked Jaron about the possibility of having the computer use fractal approaches to construct a realistic landscape complete with plant life. There are a number of systems under development for creating artificial, mobile life forms as well. He emphasizes the potential for exploration and novelty in VR, and I thought he would appreciate the idea of having the computer generate a complex ecosystem without human intervention that could then be explored as if it were a newly discovered continent. He said that someone at VPL was working on artificial life, but that he personally was not interested in that.

Finally, we talked about what intrigues me, and many other cybernauts, most about VR—the question of when it will be possible to dispense with the clumsy goggles and gloves and tap directly into the human brain? This would allow the creation of all the sensory and motor experiences of the "real" world, the ultimate goal of virtual evolution. At first he said that would not be possible because the sensory systems are not passive detectors but active processing subsystems. I agreed that they're active subsystems, but asked why it would be impossible to create active computer analogs of the sensory apparatus that could interact with the brain the same way. Then he said that it would be unethical. I was amazed by that. I have to admit that I never considered that reaction. He said that people would not be able to tell the difference between Virtual Reality and Reality Proper. I asked if he thought it unethical even if people were willing to take the responsibility on themselves, and he was still against the idea. Just because some idiot can wreck a car, that's no reason to prevent everyone from driving.

Part of the problem, as I see it, is that entrepreneurial visionaries tend to have well-defined scenarios for the evolution of their technology. There is a process in sensory psychology that provides an apt metaphor for certain aspects of their behavior. When a bright point source of light is presented to the eye, the retinal cells surrounding the image of the point are inhibited from firing. This is called "surround inhibition." It sharpens the perception of the point of light. Visionaries tend to support opinions that reinforce their vision, and they have a number of strategies for suppressing opinions that don't. When I asked Jaron about various things I was interested in, they were either not technically feasible, not commercial, not interesting, not a good idea, or unethical. My futurist background suggested to me that my ideas are going to be explored because of real psychological, social, and economic demands, regardless of Jaron's opinion.

Burt Webb
Seattle, WA.

Dear Queen Mu,

Thanks for *Mondo 2000* #2. I suppose you know you've messed up my whole work schedule now. This issue is so information dense that I've decided to read it from cover to cover. You have a completely outrageous, irreverent, cage-rattling, thought-provoking publication here. Enclosed is my subscription—money well spent.

I don't consider myself a cyberpunk, acid head, hacker or New Age anything, but I have a craving for new ideas and alternative solutions, especially when they counter the mechanical sleepwalk that passes for knowledge in the popular media. I am not brain dead and I'm fighting like hell to stay conscious. As you know, that isn't easy in Orange County.

I've been working on a book with a strong McLuhanist foundation called *Beyond the Machine: The Coming of the Hologenic Age*. As you already know, Communism has proven to be obsolete; it is my contention that material capitalism is ready to follow.

In my chapter, "The Transformation", I describe how energy, information and technology are fusing into one entity, transcending all cherished notions of centralized natural resources and centralized control. Communism and capitalism are both fading artifacts of a Mechanical Age that is now being replaced in the electronic cybersphere. In its place is emerging what I call the Hologenic Age.

Keep the issues of *Mondo* coming. They're maddeningly stimulating reading; just the grist I need to keep me from going bonkers in this intellectual desert.

Jim Henry
Irvine, CA

Dear Editor:

In *Mondo* issue 2, I alerted your readers to the bloodsucking aliens' Master Plan to take over the world from their plush caverns in the U. S. deserts and make us into spaceship-building slaves by 1994, in cahoots with U. S. and Soviet government officials who will escape to Mars just before the world ends in 1999, as described in the previously Top Secret Majestic 12 government documents (and by Nostradamus, who also predicted 1999 as the end of the world).

I'm afraid the Grays' plan is proceeding right on schedule. The PR-savvy little bastards are now using the media to ease us into accepting them, or perhaps to terrify us into total submission. ABC is planning an alien comedy show this fall. Whitley Streiber's scary new novel, *Billy*, about alien contact, is just out. And the U. S. Defense Intelligence Agency's heretofore secret $50 million/year UFO Working Group has just gone public, using New York Times reporter Howard Blum, author of *Out There* (Simon & Schuster). The DIA, said Blum on CNN, is showing people documents at Air Force bases saying that the aliens created Jesus Christ and other wild stories. Hey, I'm NOT making this up—read the book! There won't BE any year 2000 to MONDOize if the Grays have their way.

ABC's *20/20*, which went to England to film the mystery circles, captured an image of the aliens on videotape but didn't realize it. If you turn the circles in the field they showed on TV upside down, you'll see a giant praying mantis-like insect, presumably what the insectoid aliens really look like.

Am I being used too? Probably. I recently woke up at 4 AM to find my body tingling all over (I felt I was being

irradiated by powerful radar signals coming from the north), with powerful high-speed images flashing through my head like I was being downloaded in a computer transmission. This was NOT an "aided" experience!

Meanwhile, Saddam Hussein is playing his assigned role, creating the threat of world war. The real purpose, one can assume, is to justify the hundreds of billions (disguised as costs for the Mideast War and SDI research) for constructing space vehicles to take the chosen to Mars and justify total control of U. S. and Soviet citizens as our economies plunge toward recession. Another handy source of funds is the $500 billion we have to pay for the phony S&L bailout engineered by none other than George Bush's son Neil.

In another apparent government-leaked attempt to build public hysteria and space program acceptance, the August 28 *Sun* reports that a meteor is heading for Earth guided by UFO invaders and capable of hitting in November 1990 with the force of 200 atomic bombs. The only hope is (you guessed it) a Star Wars-style laser weapon.

Of course, the aliens don't want us to know the whole truth yet. On August 22, just as the Magellan spacecraft started sending pictures remarkably like the Earth from Venus, the spacecraft started spinning wildly, sending transmissions in every direction in space.

Sure, I'm paranoid. But am I paranoid enough? Is this letter really just disinformation telepathically projected on my mind by Trilateral MJ-12 scannate psyops or are UFOs a secret plot by virtual reality-depraved psychocybernaut cultists? (Note: virtual reality technology is based on research at Wright Patterson AFB, where the crashed aliens and their spaceships were taken in 1947. You figure it out.)

Xandor Korzybski — (X-and-or)

Dear R. U. Sirius & Queen Mu,

Mondo 2000 is a wonderful magazine and I cannot extoll its virtues enough. Though I was mighty pissed off when reading John Perry Barlow's article on virtual reality. It was a good piece until toward the end when the question of sex in virtual reality came up. All of a sudden in this description of the physical implications, the reader could potentially be "under-endowed," "any partner would be so insubstantial you could walk right through *her*," in other words, the reader must be male. Give me a break. The leading edge of the article suddenly echoed writings of the Victorian era when only men were written for. Women may not be overabundant in the field of computer programming and cybernetics but some of us are worrying our pretty little heads about technology. Please include us in an already male elitist occupation. You have the opportunity through *Mondo 2000* to lead dialogue on technology at a very pivotal point in time; do it equally and intelligently.

Sara K. Davidson
Toronto, Ont.

Dear Mondo,

Back when you were *Reality Hackers*, I hated you because of 1) Tim Leary; 2) Terence McKenna; 3) misuse/misappropriation of computer babble. Now, I do not find *Mondo 2000* so offensive; I even like much of it. The pseudo-science is entertaining if I don't consider the deeper implications of pseudoscience's effects on society. You all must be doing something *wrong*.

Please print *MONDO* on a more readily recycled stock. After all, most of the articles will be obsolete soon. And obsolete info is about as useful as a hole in the forehead.

John Kawakami

Dear Techno-Dupes,

Warming over the SubGenius one-joke, ten years tired, for the techno-nerds? In your case, you might as well. Like your model reader, a SubGenius might well be defined as a white male who didn't date in high school. Somebody has to be the last to "get it," and SubGenius is ideal for the system's Walter Mittys, its docile drones who suppose their technical skills and off-hours hobbies somehow set them above all the other suckers and, by this very supposition, confirm that *they're* suckers too.

Editorial corruption reaches a new low as Douglass St. Clair Smith ("Doug St. Clair") reviews, favorably—surprise, surprise!—*Three-Fisted Tales of "Bob"* edited by Douglass St. Clair Smith ("Ivan Stang"). SubGenius is so devoid of talent and energy that Smith is the only Sub competent to review him-self, although understandably he'd rather not say so. I too wrote a book—"Ivan Stang" ecstatically introduced it— but I was never reduced to writing my own reviews. Why did you make room for this odious instance of consumer fraud?

Incidentally, there is no reason to pay $40 for the SubGenius video when quality bootlegs are readily availably for half the price. Freedom of information!

If Lewis Shiner, whom I greatly respect—whose novel *Slam* credits me as a "major inspiration"—had not gone to prep school with Smith, I doubt he or some of the other cyber-punks would perpetuate their compromising connection with the SubGenius scam. He needs them, they don't need him.

Why, who thinks for a moment there is anything radically challenging, politically or culturally, about this SubGenius sole proprietorship (you guessed it, "Stang")? I would refer you to that photo on pp. 154-155 of Puzzling Evidence (Doug Wellman), assassinating the fictive "Bob." (Seconds later I myself "killed" Wellman, yes, I write from inside knowledge.) Lest your readers, expecially in the Bay Area, be tempted to smoke a little *'Frop*, as Subs call it (and as I have) with Wellman, they might like to know he is an Oakland police officer.

SubGenius, which started out as a parody of a cult, has turned into one. Once a middle-management SubGenius hierarch, I, then "Mahatma Propagandhi," broke with the Church and published criticisms of it. A year ago, an inner-circle Texas SubGenius, John Hagen-Brenner sent me a mail bomb. He pleaded guilty on August 20 and will be sentenced on November 1. SubGenius is now a lowing herd of consumers with an upper crust of yuppie snobs who tell them what to laugh at and when. As my readers know I press the boundaries of humor to their limits but really, is an attempt on my life, my limbs or my eyesight risible?

Very sincerely,
Bob Black
P.S. This will be published in my next book, so why not avert well-publicized contempt, evince a modicum of integrity and publish it yourself? I say this as a friend.

Hey, so how were we to know that Doug St. Clair was really the conspiratorial Zionist KGB Zombie Stang? Geez. Just because the review came to us along with 23 fresh $100 bills... I mean, some people really *like to write for us, OK?*

Sirius M

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A micro-interview with *Life Extension* authors Durk Pearson & Sandy Shaw

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Congressional Bill Would Suspend Constitution, Declare Martial Law

by Tomas Estrada-Palma & Larry Monaghan



Illustration by Jo Hassall

A new bill, HR 4079, co-sponsored by Representative Newt Gingrich and Senator Phil Gramm, would open the way for American concentration camps to be built, and thereafter permit the state to round up *suspected* drug users and force them to work without compensation for the state.

The bill proposes suspending the Constitution for five years so that millions of illegal drug users could be held by the state in concentration camps. All internees would be forced to work and if anyone is caught with drugs in the camps, they would have one year added to their sentence each time—with no right to appeal.

HR 4079 calls for declaration of a five year national state of emergency—in essence martial law. It proposes reopening the Japanese Internment Camps used during WWII, using active and inactive military bases as prisons, and instituting a new privately owned prison system as well. To aid in accomplishing this, the 4th Amendment, the 8th Amendment, and habeas corpus are to be either superseded, redefined, or disallowed. A provision has been built in to allow the government to purchase goods manufactured by prison slave labor. To ensure the duration of this labor force, all previous maximum sentences would be changed to minimum sentences. New mandatory sentences would be applied, and probation, parole, and suspension of sentences revoked.

To provide an even greater pool to draw from, mandatory drug testing of just about everyone above junior high school level has been included in the bill. However, the resolution carefully avoids addressing the necessary funding.

Although press releases regarding the bill were sent out to all the national and local news outlets by the Maryland Libertarian Party, there has been practically no mention of the bill in the media. The state evidently is hoping to sweep this bill into law right under our noses while we are all preoccupied with other events taking place around the world.

Everyone needs to make phone calls and write letters. Direct your correspondence to the media and your representatives as well as Gingrich and Gramm. If they don't think you care about this bill becoming law—it will! Act now or cry behind the barbed wire later. *reproduced from the July 1990* Libertarian Party NEWS. M

Editor's note: The number of the bill, once again, is HR 4079 and this report is not *exaggerating. Look it up.*

Pushing the Rollercoaster



Illustration by Jo Hassall

by Louis M. Brill

Just when you thought it was safe to sit down, Mondoids, the seat's rocking and rolling and it ain't no earthquake.

Rollercoasters have become high-tech. This means faster cars, cars that go backwards, more imaginative track layouts, overhead gondolas, and coasters in which patrons, safely coupled to the ride car, actually stand up. The rides are not only pushing the physical limits of track physics, but they're also pushing the limits of a more elusive envelope—reality.

The rollercoaster, America's number-one amusement-park pastime, has reached new heights in coaster cruising concepts, including a ride that sends one's mind into coaster heaven. Another ride in development blasts off through a staged, movie-set-like area, where "getting off" isn't leaving the ride so much as leaving the park behind to join in a participatory adventure employing a dilapidated space courier service. The VCR generation has become more demanding of entertainment, and this attitude has amusement and theme parks scrambling to provide new thrills. The most interesting advance is amusement park rides that manipulate guests' perceptions while physically moving them about.

Pseudocoaster

The simulated environment—employing film, theatrical staging, and fantasy themes—is the latest amusement park trend. The "pseudocoaster" appears to swing and rock along every curve on the track while sitting perfectly still. This concept is based on sophisticated aviation flight simulators. Know as "the leisure simulator," these civilian versions use similar computer-controlled motion platforms complete with selective reality simulations that employ motion-directed films of runaway trains, river raft rides, race cars on speed tracks and, you betcha, rollercoasters. Ride simulators are sponsored by various movie companies who aim to make motion a part of the movie-going experience while making film part of the amusement park experience. One company, the Showscan Film Corporation, is already renowned for introducing a high-resolution system that projects movies at 60 frames per second (faster than the conventional 24). Viewed at this speed, films generate a highly visceral, experiential reaction, putting viewers within the scenes of the film.

Combine a Showscan film with an animated auditorium and almost anything is possible. A Showscan Dynamic Motion Simulator (DMS) is installed in a small movie theater with hydraulically activated seats. A computer program synchronizes the motion of the seats to the actions within the film, creating realistic visual and sensory simulation.

Reality Envelope

First-time guests encountering the DMS are in for a real treat. Upon entering, you approach a row of seats facing a large, white screen. After a short wait, a safety bar falls into place directly in front of you. The film begins with the screen presenting the lead car of the rollercoaster approaching the top of a steep section of track.

Suddenly your seat tilts back in keeping with the pitch of the hill. The familiar clank of coaster chain rattles beneath your seat. Slowly your seat appears to level off just before you're presented with the heart-stopping view from the top of the highest hill of the Colossus rollercoaster. As you look around, you'll see a magnificent panorama of the entire rollercoaster track works and the surrounding park.

With a great shudder, your car suddenly drops over the hill. The DMS seats tip forward as the track goes hurtling by. Your eyes and brain whisper, "It's only a film," but your mind screams a different story. "Oh my God, I can't believe it! It seems like ninety miles an hour down the track!"

You hold on for dear life as the seats vibrate, heaving to the sides as they bank against each turn. Your mind boggles in the futile attempt to distinguish between the illusion and the reality. The illusion wins out as the seats tilt backward for a climb up yet another hill. You may be going nowhere, but you're getting there very fast.

All of the overseas installations of DMS are in amusement parks. But to find the first U.S. installation, visit the Excalibur Hotel/Casino in Las Vegas, where it is called Merlin's Magic Motion Machine.

The Disaster Transport

If a real coaster is more your speed, Cedar Point in Sandusky, Ohio, is the first amusement park to create a "theme" coaster attraction employing special effects, pre-show sets, film, and staged theatrics. Cedar Point is the home of 9 roller coasters (the largest collection in the world). The Magnum XL-200 is one of the fastest and meanest, with a 205-foot-high first hill and a second hill that towers 157 feet over Lake Erie. It's listed in the *Guinness Book of World Records* as the fastest coaster (72 mph) with the longest drop. But Cedar Point hasn't settled for merely pushing cars on a track. Witness their Disaster Transport.

The Disaster Transport is a walk-through attraction that uses over one million dollars' worth of special effects including robotics, animation, supporting video programs, fog, simulated laser effects, film segments, and . . . oh yes, a roller coaster. Patrons enter a pre-show area that appears to be an abandoned, rundown, futuristic space-launch facility.

Producer Eric Gordon, a senior production designer at ITEC Productions in Orlando, Florida, describes the attraction as "a theater for the mind and body. It's a three-dimensional entertainment that involves its guests much more than any movie. Walking through the pre-show gives you clues about where you are and where you're going, and then the ride takes you there."

Within the self-contained, enclosed set, ride operators in futuristic garb take audiences on an interplanetary trip where they will encounter space pirates, laser battles, asteroid belts, and heaving coaster cars—all for the sake of a good ol' time.

Through the Looking Glass

Amusement park patrons look to be in for some special chills and thrills as multimedia, interactivity, dramatic special effects, and epic staging literally transport them to other worlds. It's not like going through the looking glass, but it's getting closer. M

To experience the above adventures first-hand, contact:
Cedar Point
P.O. Box 5006
Sandusky, Ohio
419/626-0830

or:

Excalibur Hotel/Casino
Merlin Magic Motion Theaters
3850 Las Vegas Boulevard South
Las Vegas, NV 89109
1-800-937-7777

Louis M. Brill specializes in reporting on high-tech entertainment and is currently writing a book on the history and future of film exhibition.

Your eyes and brain whisper, "It's only a film," but your mind screams a different story

DATA AT THE SPEED OF LIGHT

Fiber in the Valley

by Denise Caruso

From the most unexpected sources inspiration comes. At last month's Digital World Conference in Beverly Hills, Bill Smith of Demand Video Systems in Victoria, British Columbia, said almost in passing that "Silicon Valley is an obvious first site for a fiber broadband network, as part of a major national effort," and that he wanted to help make it happen.

Translated from technospeak, a "fiber broadband network" refers to an upgraded telephone network that replaces the dual-strand copper wire physically connecting your home or business telephone with the phone company's central office. Fiber optic cables use light to transmit data at 622 million bits per second or faster, as compared to the snail's pace of today's copper wire, 64 thousand bits per second.

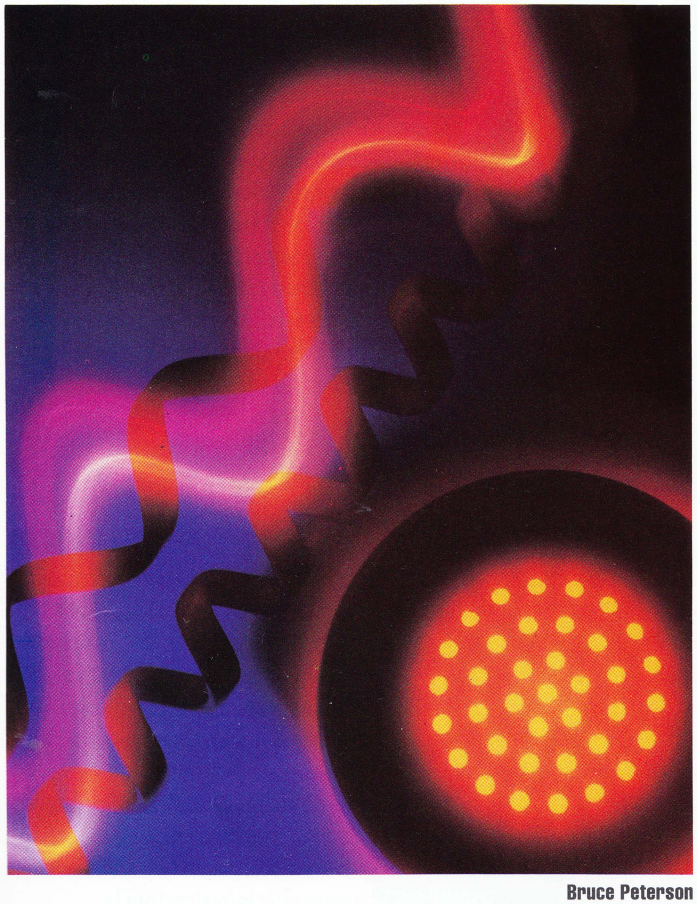
Smith is a data communications expert who's known in Canada as a successful entrepreneur. Right now he's doing research for his government that's taken him deep into the bowels of the David Sarnoff Research Center at the Stanford Research Institute, as well as Compression Laboratories and Sony Japan.

The founder of AISI Research Corp., which built the first chip around the Electronic Industry Association's Consumer Electronics Bus (CEBus) standard for "smart houses," Smith has also served as computer systems architect for huge government projects. His present company specializes in large-scale, high-speed digital video communications.

Smith's expertise led to a slot on the Futurist panel at 1989's Texpo show sponsored by PacBell, where he heard a keynote speech by Pacific Bell president Phil Quigley. During his talk, Quigley announced that Japan had decided "to go all fiber"—a $250 billion project—and that's where Smith's idea began to take shape.

He wants nothing less than to turn Silicon Valley into a test-bed for a fully realized, high-speed fiber-optic network by the year 2000, a kind of human petri dish to cultivate and demonstrate the scores of industries that he's convinced will spring up around such a network.

"I would do it in Canada," he says, "but what the hell is the point of doing it in Canada? In Silicon Valley, even the janitor invests in Intel stock."



Bruce Peterson

Japan has decided to go all fiber: a 250 billion dollar project

Smith wants to get industry leaders fired up enough to stimulate the active involvement of Pacific Bell, who of course will have to install such a network, and to do so in time to announce a 10-year implementation plan at Texpo 1991.

The first question to be answered is, "Who needs it?" Most people feel that the information that gets delivered over the present copper telephone wires is sufficient.

But what's happening today is that all forms of information, from text to sound to graphics to video, are being "digitized"—transformed into bytes of computer-readable information. When information is digitized, it can be easily transmitted, whether by telephone wire or direct connections between computer networks.

Many visionaries see for our future a digital world where almost everything will be delivered over "conduit" into homes and businesses, which will themselves be controlled and operated via a computer-based network that hooks everything together.

This capability has been the stuff of dreams for a long time. But before the invention of optical fibers, which can actually carry data at the speed of light, trying to move large amounts of digital information over copper wire was akin to sucking an ocean of information through a straw.

Today's telephone technologies have vastly increased the accuracy and speed of information flowing down a telephone wire, and software advances have brought sophisticated services to consumers with little or no painful learning curve. But ISDN—the Integrated Services Digital Network that some people think is really high-tech—is acknowledged by many as doing nothing more than wringing every last drop of usefulness out of the aging copper network before it has to be replaced by fiber.

Copper wire, ISDN or no, will never be able to match the incredible capacity of a fiber-optic network, which can transmit at speeds up to 20 gigabits—that's 20 billion bits of information—per second. Compare that to ISDN's relatively puny 14 kilobits per second.

Besides carrying almost anything that can be digitized—telephone signals, computer communications, video sound, graphics, you name it—such a network will improve our phone service to "hear-a-pin-drop" quality.

Chicken & Egg Dilemma

Fiber optics will begin a gradual but massive shift in the way most of us move through our daily lives—changing the way we entertain ourselves, conduct our business, secure our property, fix our appliances, and run our homes.

But there is a problem here. It's the classic chicken-and-egg dilemma that holds back so much innovation. The phone company (the agar in this petri dish) doesn't want to make a big investment in fiber to the home until there are applications like the ones I just mentioned, and the companies who have the smarts to grow applications on fiber don't want to invest the time and money until they're sure there will be a successful venue for them to exploit.

Smith and others are working to convince both sides that the experiment is worth the risk. I hand-picked a couple of Silicon Valley visionaries who had some insights about the value of a fiber broadband network.

Jim Clark, chairman of Silicon Graphics Inc. in Mountain View, CA, thinks Pacific Bell should get a "special dispensation" from the

PUC and FCC to proceed, including the ability to compete as "information providers," something that is strictly verboten today (and, I think, for good reason).

"If in 5 years we're still constrained to using ordinary phone lines, or placing fiber only in these test-bed systems because we're trying to keep the company with the best infrastructure in the world from participating in this, we're just going to be the No. 2 or 3 player in the world economically," Clark says.

One application he'd like to see developed for a fiber network is the ability to retrieve music from a music server. "There's about three billion bits of information on an hour-long CD," says Clark. "With a three gigabit-per-second network, in one or two seconds you could download the whole bloody CD. I would gladly pay 50 cents per listen, and I'd listen to a lot more music, too."

Clark's company doesn't have any direct connection to such a project, but that's not the case for Keith Raffel, director of business development for Echelon Corp. in Menlo Park, a company founded by Mike Markkula and headed by former Rolm chief Ken Oshman. Echelon is creating the structure for what it calls a "local operating network," or LON—a universal communications and control technology that's applicable both in the home and in offices.

Raffel's firm is focused on home control—security systems that sense when you're home, know when you're on vacation, etc. FITV will have a great impact on Echelon's world. "The same place you set up commands for your home is where you'll also be telling the world outside what you want from it," he says. This will allow for applications such as automatic thermostats, automatic dishwashing that self-starts when rates are cheapest, and even keeping an eye on your kids using the house security system. "If you've got a video camera in the house, and a fat enough pipe (that is, fiber) to carry video to wherever you are, you could watch them from somewhere else. "His favorite example is one that came from a colleague at Echelon—far-fetched, perhaps, but technically possible. "Your refrigerator knows what's in it because everything that's sold today has computer-readable bar codes," Raffel says. "So when you're out of something, your refrigerator calls Safeway and orders more food for you"—and, of course, your bank account is debited automatically.

The Fiber Threat

Fiber optics doesn't sound like a great idea to everyone. As is true with many things about technology, the companies who have invested in existing ways to deliver information into the home—i.e., the cable television companies and traditional publishers such as newspapers—aren't looking forward to having to change the way they do business.

Fiber's enormous bandwidth immediately empowers a vast array of information providers to "broadcast," so to speak, a myriad of services into the home using a public access distribution channel.

Today, unless you break the law, the only way you can watch HBO et al. is to pay the cable company an installation fee, and as much as $50 a month. If the phone company installs a fiber phone network, the law dictates—at least today—that it can't discriminate against who gets to use those fibers. That means cable providers would have to compete in an open marketplace.

Newspapers don't like fiber for the same reasons. A fast fiber optic network would make it cheaper and easier to subscribe directly to electronic news services. Some entrepreneur would write a program to filter out all the stuff we weren't interested in, and we'd get to choose—from a much wider variety of sources—the news we wanted to read.

We're already seeing moves along these lines today by companies who are using fax machines and phone lines to deliver customized news summaries—kind of like what Ronald Reagan used to get from his staff—for busy corporate executives who don't have time to sift through mountains of magazines and newspapers.

But many who support the high-speed fiber optic phone network believe the shift is inevitable. Dick Knock, a senior consultant at Stanford Research Institute in Menlo Park, is an optical technology specialist who admits to a heavy pro-fiber bias. "I think it's going to be the next wave. Exciting things can happen, once you have the network in place," he says. "Software companies and application companies just bloom in such an atmosphere, and that's what Silicon Valley does best."

One Silicon Valley company is already working on the problem. Fremont-based Raynet Corp., which makes fiber phone transmission systems, made headlines a few months back by announcing that its LOC-2 product costs no more to install in the home than copper wire.

Despite this feat, Raynet marketing director George Ballog says that today it still costs about $4,000 to get the phone company to install a fiber line. Then there's the enormous costs surrounding a fiber installation—replacing existing equipment with optical switches, installing signal splitters so the enormous bandwidth can be used, making sure it's both reliable and compatible with the existing phone network, and so on.

Pacific Bell says it can't subsidize such a radical shift at the expense of ratepayers right now, but it fully expects its time will come. At PacBell headquarters in San Ramon, a technology lab headed by Thomas Edrington has a fiber optic telephone network up and running multiple simultaneous applications in real time, including video teleconferencing. One ambitious project is called LiberNet. Its goal is to convert paper books to digital ones, accessible via phone lines. Another, the Switched Multimegabit Data Service, is a fiber-based, public access local-area network between computer systems, which would eliminate the need for expensive dedicated lines between systems and allow businesses to pay only for a connection while it's being used.

"What Smith has suggested absolutely delights me," says Edrington, who asserts that PacBell would want a representative on a "Fiber in the Valley" committee if one is formed. "It's a neat idea, and he's a visionary. It would be neat if we could help the economic infrastructure by developing a testbed. But we're also a business. The question is, how do we do that and still make money?"

It's a good question, and Dick Knock and Bill Smith have been putting their heads together to try and answer it. The results might end up ultimately changing the world. As the late Robert Noyce once said, "Ideas are a dime a dozen. The real ideas are the ones you can push through the marketplace and sell." M

Denise Caruso is editor of Media Letter, *a newsletter on interactive media technologies. Write her in care of Spectra,* The San Francisco Examiner, *P.O. Box 7260, San Francisco, CA 94120. She can also be reached electronically via America Online (DCaruso), The WELL (dcarusowell.com), or MCI Mail (Denise Caruso).*

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STREET

The most important rallying cry for cyberpunks must surely be "The street has its own use for things." Bill Gibson said it in *Burning Chrome* and the 90's have underscored it with a vengeance. Street Tech—a regular feature of *MONDO's* items section—will explore some of these uses. We'll cover everything from commercial low-end development to technological improvisation to the fringe worlds of monkey wrenching, from brilliant hacking to low-life cracking. This is a place where street level technicians can strut their stuff and where we can warn you of the latest high-tech scams and rip-offs. Send your submissions and article ideas to me: Gareth Branwyn c/o *Going Gaga*, 2630 Walker Pl., Arlington VA 22207

Garage VR

The Mandala System is a video digitizer and collision detection program for the Amiga that allows users to create an interactive video wall similar to Myron Krueger's VideoPlace at a fraction of the cost. The users stand in front of a projected computer image while their own visage is captured on video and superimposed onto the screen. Collision detection allows them to interact with objects they see on the screen. Their movements can trigger animation, music, or control external devices in real time. Several musical environments come with the system that allow you to beat virtual drums or strum virtual harps. Virtual hockey, baseball, and other games can also be created using the authoring system that comes with the package. The Mandala software sells for $495 to non-commercial users. You also need something called the Live Board from A-Squared Systems (under $500) to process the video signal, an Amiga computer, a video camera and some means of projection. Video walls and projection screen TVs have been used.

The modest cost and ease of authoring on Mandala has made it very popular with entertainment companies and experimental artists. Ontario-based composer Kirsti Allik teamed up with her artist husband Robert Mulder to create a series of enthralling interactive performance pieces using Mandala. Their performance set-up integrates video, slides, synthesized music, and dance. As the dancers move they can trigger the audio-visual environment. The couple is currently working on *Electronic Purgatory*, a reflection on Dante's *Divine Comedy* and the Pluriverse concept suggested by physicists John Wheeler and Stephen J. Hawking.

The Private Eye is an ultra-miniature display that provides the image of a full-size, 12-inch monitor in a package measuring 1 inch x 1.2 inches x 3.2 inches. The unit weighs less than two ounces. Potential applications for the technology include hand-held computers, hands-free information displays, portable instruments and video games. Mounted on a headset, the Private Eye displays high-quality text and graphics at 720 x 280 pixels. The image appears to float in space several feet in front of the viewer.

Virtual Reality developers have been very enthusiastic about the Private Eye. Its reasonably-priced, high-resolution output makes it a natural for low-end VR. Video games and CAD applications are already in development using the "Eye." PC Connection recently announced that it will be selling a commercial version of the unit (called Private Eye PC) for $400.

Garage Multimedia

Defining Multimedia (MM) is like trying to hang on to quicksilver. For our purposes, we will define MM as the integration of communication elements drawn from different media (text, sound, video, animation). The coordination of these elements, and the corresponding interactions with the user, is accomplished through a computer. Elements may reside within the computer, or the computer can control other storage/playback devices such as VCRs, videodisc players, and TV monitors.

The current flush of interest in MM is due to the rapid spread of cheap, powerful personal computers and the convergence of several vital communications industries. The next generation of these machines will cut and paste full-motion video the way your current computer moves a sentence from one document to another.

The following innovative products are available for the low-end MM market. They operate on Apple II, Mac or DOS systems:

VidClip (TM) is a new offering from Video Production Controls (VPC) designed for Macintosh and Apple IIGS computers. With VidClip, the user can control Sony video equipment in VHS, 8mm and Hi-8 formats. Depending on the capacity of the video components, VidClip can search for user-defined spots on

TECH

one tape, roll another VCR to record, and assemble and edit a number of different "clips." To aid in this type of work, VPC provides another HyperCard Stack called "ClipKeeper." This logs the program material that's available on different tapes and defines and keeps track of interesting "clips" for future use. VidClip toolkits are between $90 and $500, depending on your computer system.

Headed by Nolan Bushnell, Vent Technologies is coming out with a suite of innovative video products. Bushnell, the force behind Atari and Chuck E. Cheese Pizzatime Theaters, believes that if you can't get the masses involved, you're wasting your time, and contends that both the entry price point and the learning curve of desktop video products have been prohibitively high. Vent's approach is to provide inexpensive gear with strong functionality and ease of use. They believe that the most interesting video pieces in the future will be authored by regular folks. Their products are designed to help, as media savant Chairman Mao said, "a million flowers bloom."

Vent's first product is called the **Mac Video Color Card** ($599), shipped in June, 1990. It's an 8-bit NTSC Video output card designed for the Mac II. Vent describes it as a "plug and play board that allows Mac presentation files to be output to standard VCRs, projection, big screen or regular television. Mac presentations can now be easily distributed and viewed by a much larger audience for very little money."

Vent's **Video Master** ($599) is "the most affordable and straightforward router on the market." This external device will control four video input devices and two output devices. Your Mac will be able to drive videotape, video disc, compact disc, and TV monitors. This can add up to powerful dual monitor presentations. M

Resources

Vivid Effects, 8461 Keele St., Unit 23, Concord, ONT L4K 1Z6 (Mandala System)
A-Squared Software, 6114 La Salle Ave. #326, Oakland, CA 94611 (Live board)
Reflection Technology, 240 Bear Hill Rd., Waltham, MA 02154 (Private Eye)
Video Production Controls, 83 Main St., Norfolk, MA 02056 (VidClip)
Vent Technologies, 110 Pioneer Way, Mountain View, CA 94041 (Mac Video Color Card, Video Master)

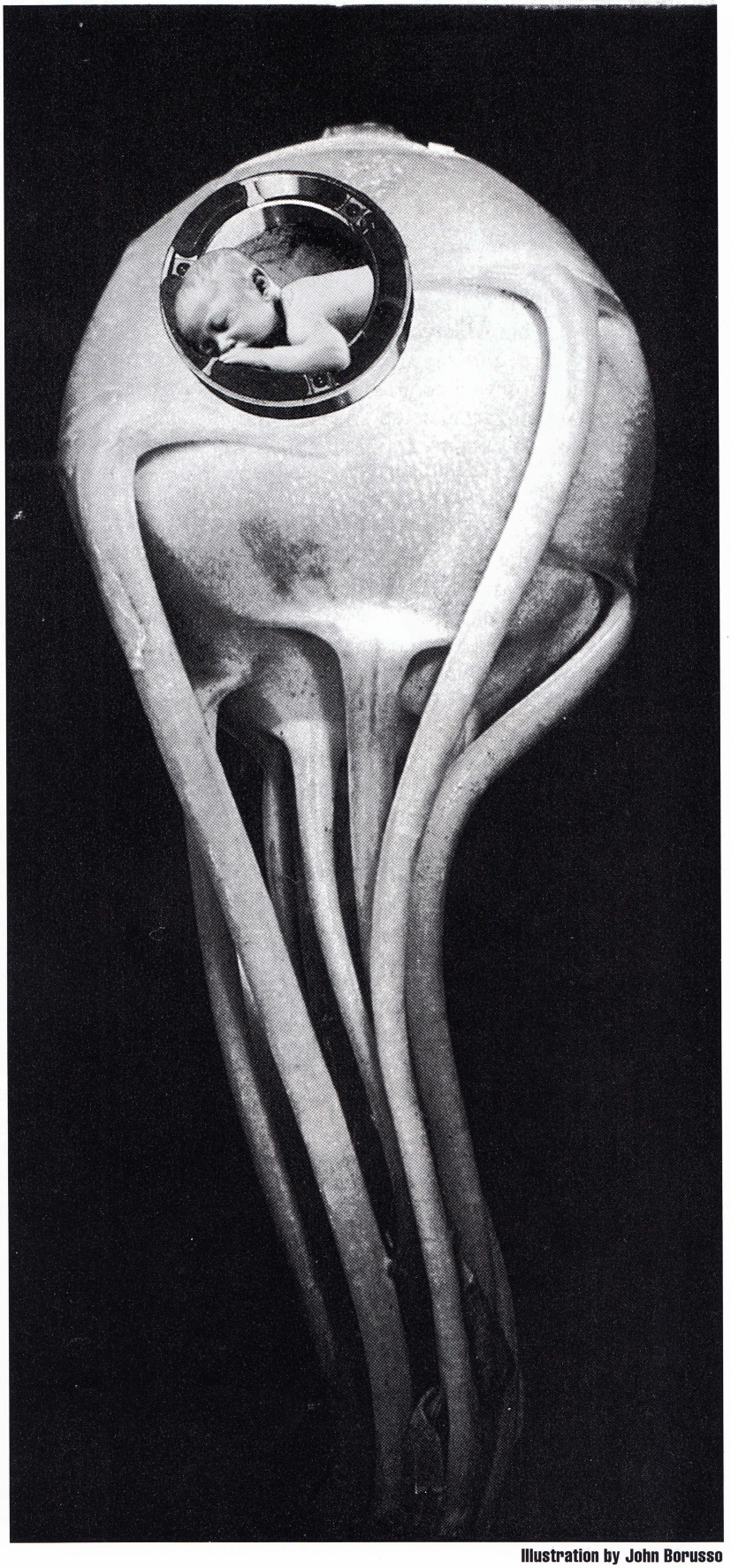
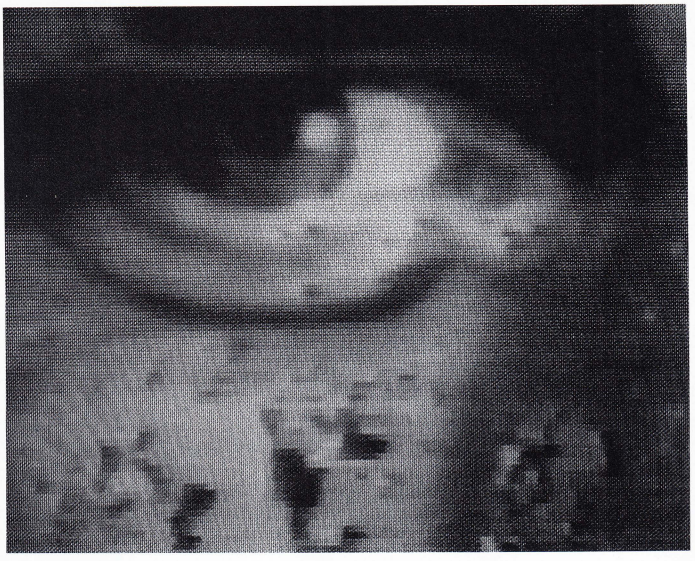


Illustration by John Borusso

PXL 2000: The Philosophical Toy



Greg Horn

an elaborate glitch

by Brian Goldberg

Toy Power to the Imagination

It's long been the operative fantasy of progressive film and video producers, as well as corporate futurologists, that we "hand over the means of (media) production to the people." Recall Sol Worth and John Adair's Navajo project (1930s), where the cameras were turned over to the "anthropological subjects" so they could produce their own ethnographic representations. Then during the 1968 uprising in France, a group called SLON (Société pour le Lancement d'Oevres Nouvelles) put cameras into the hands of the workers enabling the slogan of that revolt, "All Power to the Imagination." The dream continues today in the work of public-access cable groups like Paper Tiger Television and Deep Dish TV.

The corporate trajectory begins with the Kodak Brownie camera and continues with small-format camcorders and disposable instamatics. In the rush to secure the consumer/family market, corporate America has produced an explosion of "cheap" media. The resulting mass dissemination of a formerly rarefied technology has empowered a plethora of small art gangs and independent artists.

One of the more amusing pieces of people's media technology to date is the Fisher-Price PXL 2000 camcorder. This product was introduced in 1987, targeted to 10-16 year-old consumers and sold in toy stores. Designed to be the "lightest, least expensive, and easiest to use camcorder on the market," it developed a tremendous cult following among independent artists. Though the signal wasn't quite broadcast quality, you couldn't beat the price with a stick—under $100 for a complete camera and playback system. Unfortunately, the cult wasn't big enough to keep Fisher-Price from pulling the product off the market in 1989.

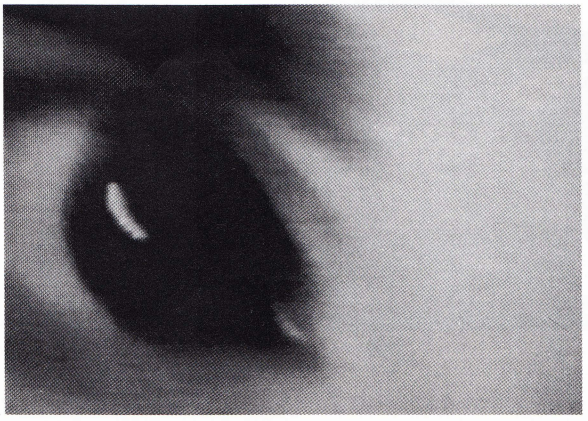
Elaborate Glitches

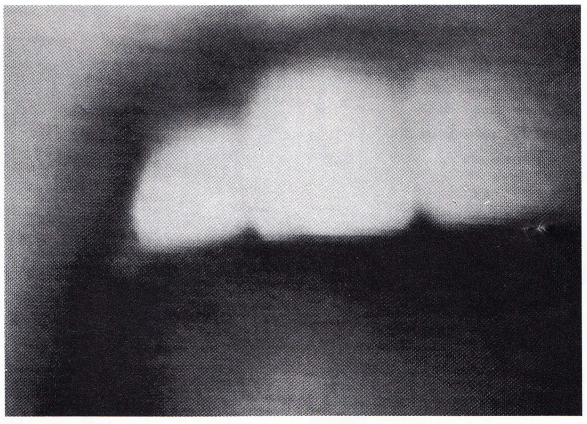
The PXL 2000 camcorder looks more like a toy than a camera. It's made of gray plastic and is designed to fit comfortably in a child's hand. I was initially surprised that it actually recorded anything. What you get is a very grainy black and white dot matrix image that has a black border around it when shown off a monitor. The sound quality from the built-in microphone is mediocre, primarily because the camera itself makes so much noise. The fixed lens requires no focusing. The image is apparently "in-focus"—from extreme close-up to infinity. Sound and image are both recorded on standard high bias chromium dioxide audiotapes at high speed (a 90 minute audiotape translates into 10 minutes of video—5 minutes per side). Due to the high speed of the transport mechanism, the images deteriorate very rapidly and need to be transferred to other formats for any kind of long term storage. There's also no way to edit the tapes without bouncing them up to a more complex system. So most tapes are edited in-camera, producing one of the system's most distinctive visual features—*elaborate glitches.*

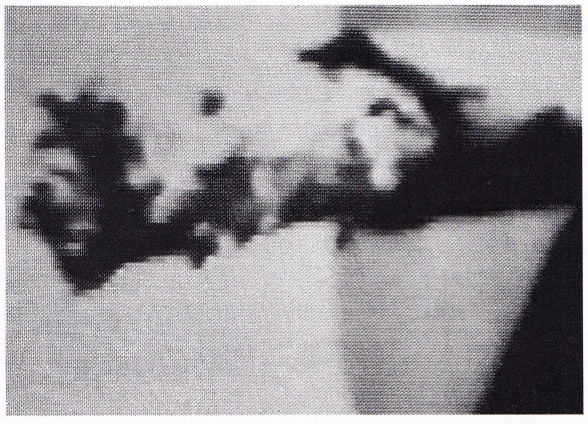
Despite the commercial demise of PXL 2000, dedicated Pixel aficionados, young and old, continue to produce an impressive range of complex, innovative, and generally hilarious videotapes. Ten-year-old Sierra MacKenzie's matter-of-fact documentary about her mother's trip to the gynecologist, 15-year-old Sadie Benning's intense video self-portraits, and LA-based filmmaker and PXL guru Erik Saks's tapes "Don from Lakewood" and "Nancy Where Are You?" are some of the best PXL-only efforts. Also notable is Steve Fagin's "The Machine That Killed Bad People," in which some of the footage was shot with a PXL camera jerry-rigged through a professional Betacam system.

Although many media festivals and exhibitors have refused to promote PXL tapes, proclaiming it a "dead format," there are still a few opportunities out there for emerging PXL artists of all ages. Mark McElhatten of the Collective for Living Cinema in New York City has been programming a continuing series called "Pixelvision: the Philosophical Toy." Selections from these programs will be distributed internationally by Drift Distribution beginning in 1991. A PXL Festival is also being organized in Baltimore for October 1991. And you can still find the occasional lingering PXL 2000 camcorder at Toys R Us, if you look hard enough. M

For more information write:
Mark McElhatten c/o Collective for Living Cinema, 41 White Street, New York, NY 10013
Drift Distribution, 83 Warren Street #5, New York, NY 10007-1057
Fisher-Price PXL 2000 Movie Festival, c/o P.O. Box 382, Baltimore, MD 21203







Frames from Greg Horn's Music video "Me Generation" shot entirely with the PXL 2000



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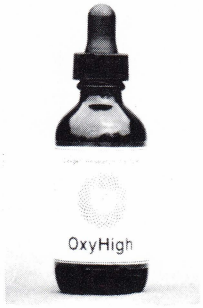
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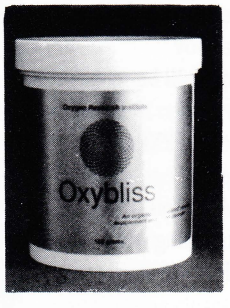


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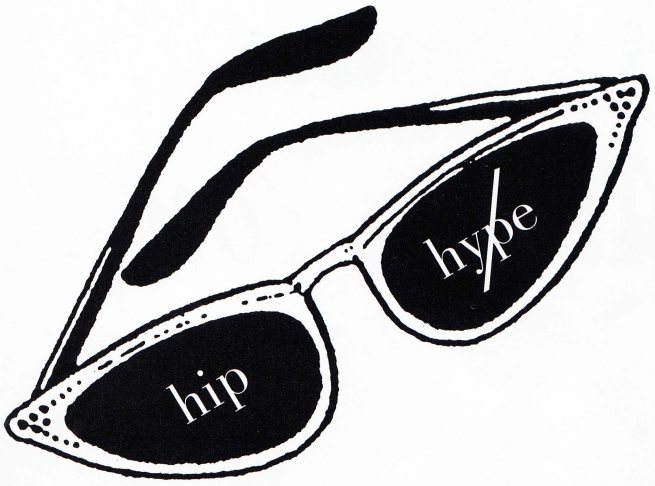
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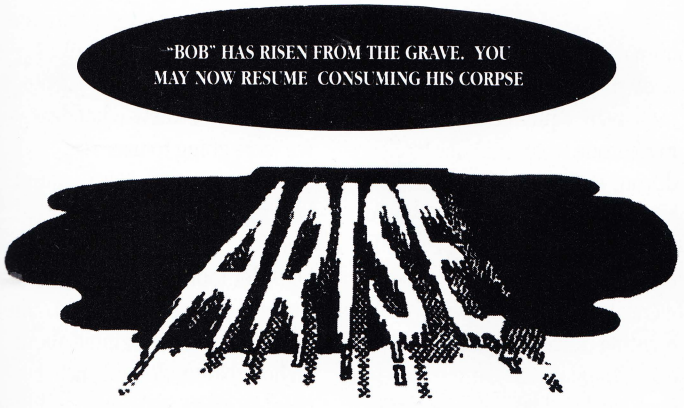
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DURK PEARSON: Mickey Townsend, the racecar driver, was going to enter a cross-country race that takes so much mental focus that...

SS: He's a friend of ours, and he asked us what would help...

DP: You have only a few nanoseconds to avoid hitting rocks or ruts on this very uneven road in Baja. We suggested he use this combination that we use in the morning to wake up with, continuously over the race. He finished a 16-hour course without even having to change a tire—this is a race where some cars burn up two *engines* over the course. Now that's mental fitness.

SS: He flipped a car once and really tore up his back; complete bedrest regimen, traction and all. Mickey consulted *seven* doctors and they all said six months. And he had a race in eight weeks.

DP: At that point he gave us a call—we had mentioned accelerated wound healing to him before—also we talked about our arginine and co-factors formulation. We hadn't found a way to make it taste good yet, but it worked. And he was pretty desperate.

SS: It smelled like dog vomit, honest to God.

MONDO 2000: Dog vomit.

SS: The doctors looked at the formulation and said, "This is harmless. It won't help, but if it makes you feel better go ahead and take it." And guess what? After six *weeks* he was out of the hospital and driving again.

All the doctors were in agreement that he had healed up. I don't recall whether he won or not, but he was in the race.

DP: Healed up like a teenager. But Mickey was in his 50s.

SS: Like in the report about the frail elderly men in the *New England Journal of Medicine*...

DP: Let me read you a quote: "The effects of six months of human growth hormone on lean body mass and adipose tissue mass were equivalent in magnitude to changes incurred during 10 to 20 years of aging."

SS: We've been using arginine for GH release since 1979, the year I broke my foot. At that point, we were about to start supplementing ourselves with it experimentally, because we'd been reading about its use for immune system stimulation.

DP: In 1976 we decided this is one of the big problems of aging. It's rare for a person in their sixties to have 20% of their T-cell immune function left. That's the part that fights cancer, the part that's wiped out by AIDS. Someone 60 years old has greater than 3 times the incidence of cancer as a twenty-year-old.

SS: And it isn't just from being exposed to carcinogens over a longer time.

DP: As for GH itself, at autopsy even elderly humans have normal amounts of growth hormone in the pituitary—enough for 100 exercising-teenage-type-releases, which is a huge pulse. It's just harder to release. So we were looking at releasers like arginine. Anyway, when Sandy broke her foot, we'd done all the toxicology work and we knew what doses we were going to use.

SS: Since arginine helps wound healing, it was an ideal time to start.

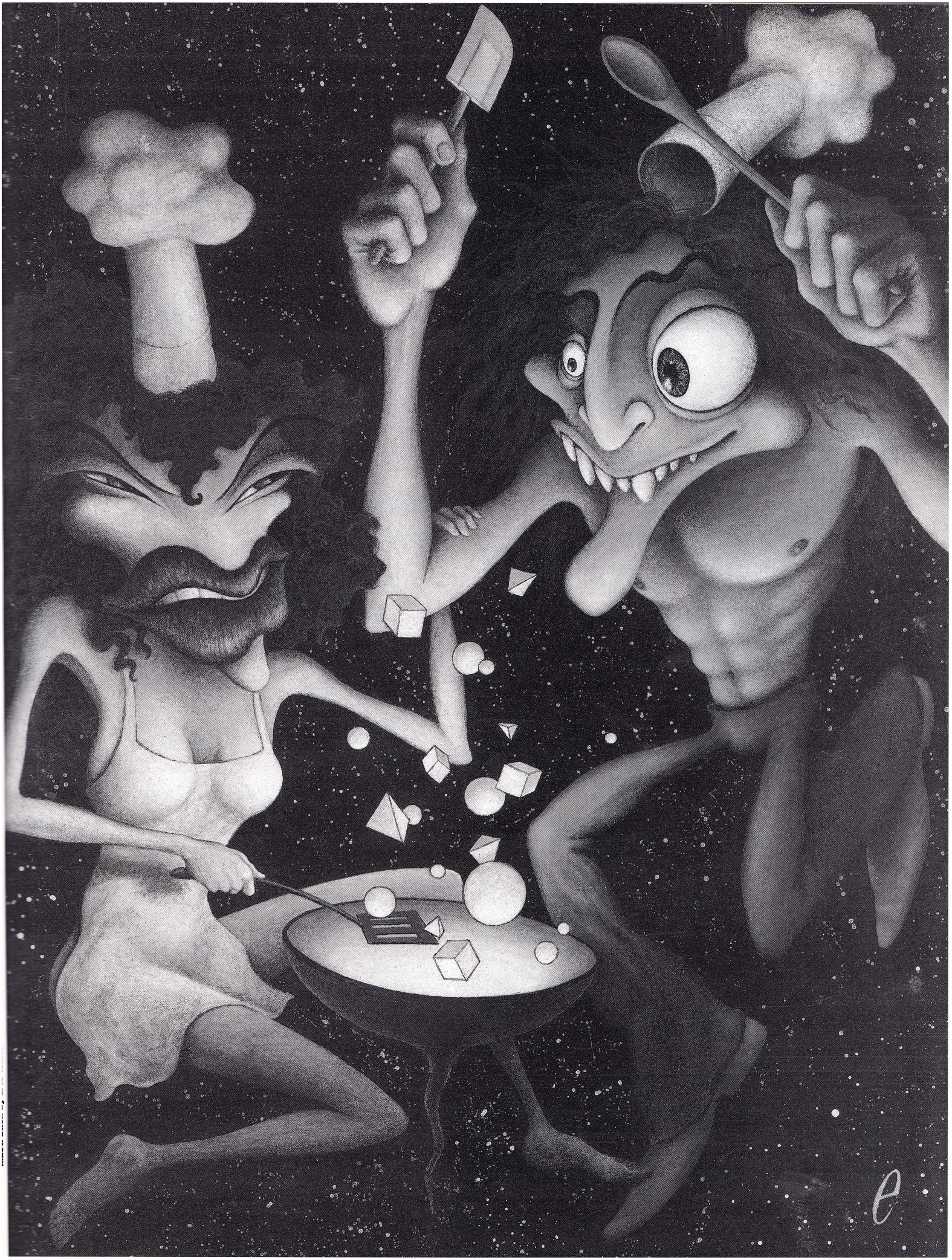
DP: Her foot healed twice as fast as the doctors said it would. She took 10 grams of arginine about an hour before doing bench presses, which she could do lying down. She did 2 or 3 minutes of this a day, and over a 6-week period she lost about 25 pounds of fat and put on 5 pounds of muscle. She should have lost one or two ounces of fat.

SS: Based on the amount of energy I had to use to lift the weights.

DP: That was the start of our using GH releasers daily.

SS: The FDA hasn't approved growth hormone in the treatment of frail elderly people. They may delay this for a long time. $14,000

Illustration by Eric White



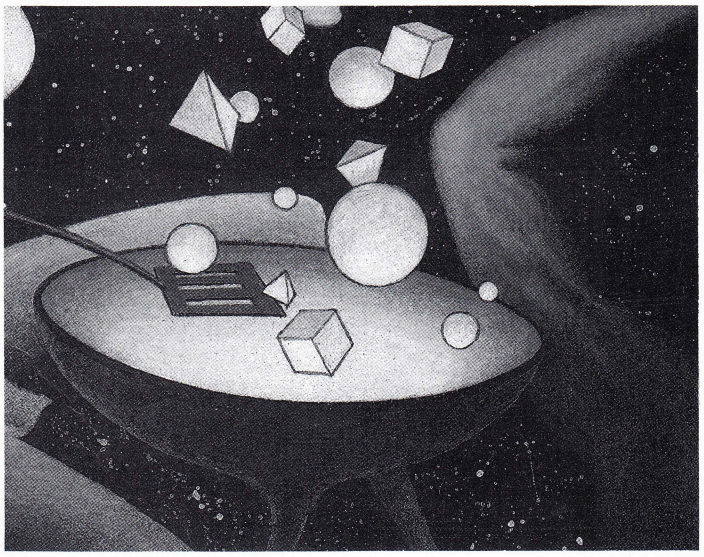


Illustration by Eric White

times the possibly 25 million or so frail elderly people, that's something like 300 or 350 billion dollars a year.

DP: But it doesn't need to cost $14,000 a year. Unless your pituitary is damaged, you can get GH by using an arginine-plus-cofactor GH-releaser *in sufficient quantities*. Most of the GH releasers on the market are drastically underpowered. We saw one that contained a quarter-gram of arginine and a quarter-gram of ornithine, which is so low it's pitiful.

SS: Arginine is expensive. That's why they don't put a lot in.

DP: Our formulation gets more mileage by adding choline and B5 and some boron. Boron increases levels of testosterone, which is a natural anabolic.

SS: The USDA scientist who discovered that boron is essential in humans proposed it be used for postmenopausal women because it increases estrogen levels. He thought it might be possible to use a boron supplement and eliminate the need for estrogen replacement.

M2: And GH release maps strongly to estrogen levels for all ages and sexes.

DP: Women are a bit more sensitive to the arginine-induced release of GH. It takes about 12 grams in a single oral dose to get a good release in women, about 18 in men.

M2: How do you use this?

DP: We take it about an hour before exercise, an hour before sex, and right at bedtime…

SS: … in order to mimic the effect that you would get from a youthful GH pulse release. In young people you see large pulses in response to exercise, and about 90 minutes or so after falling asleep.

DP: We have seen really phenomenal results. I spend all my time lying flat on my back on my waterbed with my computer terminal. I ought to barely make it down the stairs, but I've got good muscles!

SS: I'm sure it would be better if we did regularly exercise. But we don't, and we're still very muscular.

M2: When one of our editors heard that 80-year-old men were functioning like 60, and 60-year-old men like 40, he wondered if it could make a 38-year-old like an 18-year-old!

DP: Well, take one serving of arginine and co-factors an hour before sex. Then for three days 2 servings, about an hour before. From then on take 3 servings, an hour before sex. I'll tell you, he's going to notice the difference!

SS: Increased libido. It's really unbelievable! M

Grow Your Own Growth Hormone

Want another shot at misspending your youth? If you haven't got $14,000 a year, here are some interventions fresh from medical research for growing your own GH. Since GH is squirted out at intervals over 24 hours, and GH does not downregulate itself, the obvious strategy is to avoid anything that kills GH release, and seek nonharmful GH releasers (GHRs). You can manipulate diet and exercise to maximize your

own GH without recourse to chemicals. Hideous side effects can be expected from nearly every drug mentioned in:

Your Imprudent High-Growth-Hormone Day

Wake up for your mandatory sex. Not having a buddy is no excuse. Solo is fine. Your morning vasopressin will release GH powerfully, aid alertness and make orgasm (not mandatory) more intense. Since it is absorbed intranasally, it goes to work instantly, as must you. Afterwards you can relax over breakfast: a cigarette and a big cup of black coffee. This works in rats as a GHR, but you can try it before it's proved effective for humans. What the hell.

Run or walk briskly to work. Work hard in the morning. Have a couple of crises. Emergency stress is a good GHR, but constant low-level stress won't help at all. Cope heroically. Joke with your co-workers. Have fun. Endorphins are powerful. If lunch threatens, ignore it. Fasting is the most potent releaser at any age. If your energy droops, mix yourself a nasty cocktail of arginine, ornithine, niacin and vitamin C (folk science says arginine can reactivate herpes. This is not proved. Arginine is used in GHR research and appears to enhance immune function. Ornithine, made from arginine in the body, is an even more potent GHR.) Work vigorously to cope with your crises, taking aspirin PRN. If you feel tense, take a Xanax. Valium is forbidden. At your midafternoon slump, succumb. Take a 90-minute nap. GH is released in the first 90 minutes and is shut off by REM sleep. Waking up with sex may be inconvenient. Do some pleasurable stretching and toning exercises and pop some L-dopa, bromocryptine and a couple of antihypertensives that favor a- over b-adrenergic receptors. Be heroic with another crisis or two, snorting neosynephrine and popping aspirin as you will.

Run or walk briskly home from work. If dinner is unavoidable, the opiate of your choice will moderate your appetite as well as release the GH. A high-protein low-fat meal also releases GH. Turkey and fish fit the profile. Forget

Do some pleasurable stretching and toning exercises and pop some L-dopa, bromocryptine and a couple of antihypertensives

dessert: free fatty acids and glucose kill GH. Forget alcohol. It kills GH and will wake you in the middle of the night, too. Instead, *pretend* to drink. This gives you license to argue fiercely, laugh a lot and have too much fun—more endorphins! Your usual dinner companions may start to avoid you. This is good. Seek out those who will fight with you happily, dance with you or fuck you. You may make a few enemies. This is also good. Nonlethal skirmishes are great GHRs.

At the end of your high-GH day, you might run through a checklist. Did you remember to shoot up your insulin? Did you get some vigorous exercise in addition to all the sex? Did you take some ergot relative or dopaminergic agonist, and produce your quota of estradiol estrogen? Did you flee before fats, oils, alcohol, honey and maple syrup? Good, good. Now it's time to fix yourself a bedtime snack of vitamin capsules with a foul cup of arginine and ornithine, take slow-release niacin to kill any ronin fatty acids in your blood and take a short-acting barbiturate to kill REM sleep. Do a few pullups or toning exercises, squirt some vasopressin into your nostrils and have some more sex, whether you want it or not.

Do you find this too strenuous? Do you fear side effects, unsuspected synergisms and overdoses? You might try instead:

The Prudent High-GH Regimen

Fast at least one day a week. This is the most powerful releaser of GH. It seems to reverse aging remarkably, redistributing body fat, producing a lower fat-muscle ratio and a more youthful chemical profile. Eat high-protein low-fat vitamin-rich snacks, and take 90-minute naps. Do something strenuous every day. Swim, dance, engage in the sex of your choice. Do yoga and Tai Chi for pleasure, to release endorphins. For the same reason, laugh easily and go far out of your way to please yourself. Walk briskly. Breathe with your whole body. Use muscles to breathe. Shallow breathing is also related to cardiovascular problems. Embrace emergencies vigorously. Love your friends as energetically as you combat your enemies.

Live well, live long! M



Illustration by Eric White

The War on Drugs and FIJA

by

Robert Anton Wilson

According to the *Christian Science Monitor* (February 13, 1990), many delegates at the February meeting of the American Bar Association believe that the "war on drugs" has placed such a crushing burden on the Federal Courts that the system simply cannot bear it any longer.

Because drug cases now account for 44 per cent of all criminal cases and 50 per cent of all criminal appeals, ABA President Stanley Chauvin estimated that it now takes 3 to 5 years to bring a civil case to trial, and the delays will steadily increase as more and more drug cases clog the system. A 15-member ABA panel recommended that more drug cases should be taken out of the Federal system and turned over to State courts.

By coincidence, or synchronicity, the same day, a State Supreme Court judge pointed out that the States simply can't take on this additional burden. California Chief Justice Malcolm M. Lucas in a State of the Judiciary address to the legislature indicated that drug cases "are swamping the courts. The system has begun to take on so much water we are close to foundering. Too often, civil cases get drowned."

Justice Lucas was especially concerned that the increasing delay in hearing civil suits has long postponed important cases "that affect the environment, civil rights and other important aspects of our lives." (*Los Angeles Times* February 13, 1990).

Of course, the Bush administration ignores these warnings. The "war on drugs" continues to escalate, with the Bill of Rights getting more and more trashed every month.

By May 23, 1990, according to another *LA Times* article, the State Judicial Council of California complained that the problem had gotten even worse.

Noting that drug cases by now make up *60 to 65%* of all criminal prosecutions and "drug-related" cases, the SJC expressed "serious alarm" at the growing backlog of civil cases indefinitely postponed. They also pointed out, as an ominous symptom of things to come, that San Diego ceased to hear civil cases at all for one month recently, to catch up on the drug overload.

William E. Davis, state administrative director of courts, added that the only reason the system has not completely broken down yet is that most cases are plea-bargained and never come to trial. "I hate to say it," Davis told the press, *"but if even 1% or so started going to trial instead of pleading, we couldn't sustain it."*

And the Bush administration still pays no attention and continues the war. Whatever George and his friends lack in common sense, they make up in machismo.

More and more distinguished voices are speaking out, calling for an end to a war that can't be won. Conservative columnist William F. Buckley. Mayor Kurt Schoke of Baltimore (a former federal prosecutor). Astronomer/TV star Dr. Carl Sagan. Former NY police commissioner Patrick Murphy. Judge Robert Sweet. Former Secretary of State George Shultz. Will Hearst, editor of the San Francisco Examiner. As Peter Reuter of RAND said (*LA Times*, November 20, 1989), "There is an enormous closet elite interest in legalization... This is the central question they [intellectuals] want to discuss."

Since Congress shares Bush's abject submission to mob prejudice as the guide to all political decisions, the voices of the intellectuals will have no more effect than the voices of the judiciary. We seem to be stuck with the War for a long time.

Or are we? In 22 states, there are organized movements fighting for a new Constitutional Amendment, called FIJA, which can stop the "war on drugs" and every other idiocy or tyranny that Washington tries to impose on us.

FIJA means Fully Informed Jurors Amendment. It would order all judges, in all 50 states, to inform jurors that they have the right to acquit in any case, whatever the proven facts, *if they disapprove of the law.*

This means also that a single juror can hang the jury and force a

mistrial if she or he sincerely considers the law a bad one.

American (and English) juries have always had this right, but judges are usually loath to tell the jurors this. Only Maryland has an article in its Constitution obliging judges to tell jurors that they have this right of nullification.

This right was written into the Magna Carta and built into our own system because our ancestors understood that it takes a long time to pressure a government into changing a bad law. Jury nullification guarantees that a law can't be enforced unless 12 people selected at random—a cross section of the community—*all* agree that the law is a good one, or that people should be punished for breaking it.

Frankly, with the Supreme Court dominated more and more by the Authoritarian Right Wing, I think the fully informed jury is the last hope we have for preserving any of the Bill of Rights. In a sense, it doesn't even matter if the FIJA Amendment gets beyond 22 states and accumulates enough support to become the law of the land. Knowledge of it is moving at such a momentum that more and more jurors will know, whether the judge tells them or not, that they can nullify any law they find tyrannous, repugnant, against their individual conscience, or just plain idiotic (like the anti-pot law).

The greater the number of prospective jurors who know that, the sooner we will get rid of the "war on drugs" and all the other gross and petty tyrannies imposed on us by the Bombs-and-Jesus crowd who have ruled this country for most of the past two decades.

If you want to know more about FIJA, write to FIJA, PO Box 59, Helmville, Montana 58843. M

Flow Like a Dragonfly, See Like a Bee: A Drug-Free Expansion of the Senses

by

Nick Herbert

What would it be like to experience the world via the sonar sense of a dolphin or a bat, or sense electric fields as certain fish do? How does a plant feel while it is grazing on photons of light? If you could directly experience the sizzling sensation of photosynthesis, how would you describe the taste and smell of sunlight?

When science succeeds in developing mind-links that permit us to share the inner experiences of other sentient beings, such questions will be more than academic. The mind link will immediately rub our noses in utterly alien modes of perception. As a foretaste of what acquiring an entirely new sense might feel like, I invite you to revive a scarcely used human sensory ability I call "bee sight."

Light from the sky is partially polarized with a direction and intensity that varies with the sun's position. The eyes of honey bees are sensitive to skylight polarization, presumably to help bees navigate to and from their hives on cloudy days. It is a little-known fact that human eyes can also sense skylight polarization, but most of us never bother to exercise this vestigial talent.

Warning: Once you learn to experience "bee sight," it may be difficult for you to unlearn it. Do you really want to contaminate your future sunset vistas with a distracting overlay of skylight polarization icons?

From a physicist's point of view, light is a transverse vibration of electric and magnetic fields that is travelling through

space at the astonishing speed of 300,000 kilometers per second. The word "transverse" means that light's fields vibrate at right angles to the direction in which the light is moving. The light's electric and magnetic fields also vibrate at right angles to one another. The "polarization" of a light beam is defined as the direction of vibration of the electric field.

To visualize this interlocking set of right angles, imagine a beam of polarized light shining directly into your eye. If you could see the electric and magnetic fields, they would make a big "X" in your plane of vision. Along one arm of the X the electric field vibrates; along the other arm vibrates the light's magnetic component. Picture the electric arm of the X colored bright blue (electric blue?), whereas the magnetic arm is colored yellow (magnetic mustard?). The direction of the blue arm defines the polarization direction of the light beam. If the blue arm points in the vertical direction, for instance, what you are looking at is a beam of vertically polarized light.

Light is said to be "totally polarized" when its electric field vibrates in only one direction, and "unpolarized" when its electric field changes direction in an erratic manner. All other situations correspond to "partial polarization." Direct sunlight is unpolarized, but scattered sunlight—skylight, for instance—is usually partially polarized.

To experience bee sight, it is best to begin by viewing light that is totally polarized, such as that obtained by looking at the sky through a sheet of polaroid plastic or polarized sunglasses. Polaroid plastic is a transparent grey material that only passes light polarized in one particular direction—the direction of the polaroid's "optic axis."

As you look through the plastic, you will soon become aware of a "polarization icon" in the shape of a Maltese cross about five times as large as the full moon. One arm of the cross is blue, the other yellow. The cross has the visual character of an afterimage, and, like an afterimage, tends to fade away after a few seconds. To revive the icon, blink your eyes, shift your gaze, or rotate the polaroid. When you turn the polaroid, the icon will rotate too, looking as though it were fastened to the plastic. Most people's first glimpse of the polarization icon (also called "Haidinger's brush," after Austrian mineralologist Wilhelm Karl von Haidinger) occurs during polaroid rotation, when they surprise themselves by suddenly catching sight of a big, blue-and-yellow cross slowly turning in the sky.

After you know what the polarization icon looks like, try to see it in the sky without the aid of the polaroid. Best results are achieved at twilight against the background of a dark-blue sky. Sometimes the sky appears to be covered with a latticework of yellow and blue crosses, an unforgettable sight.

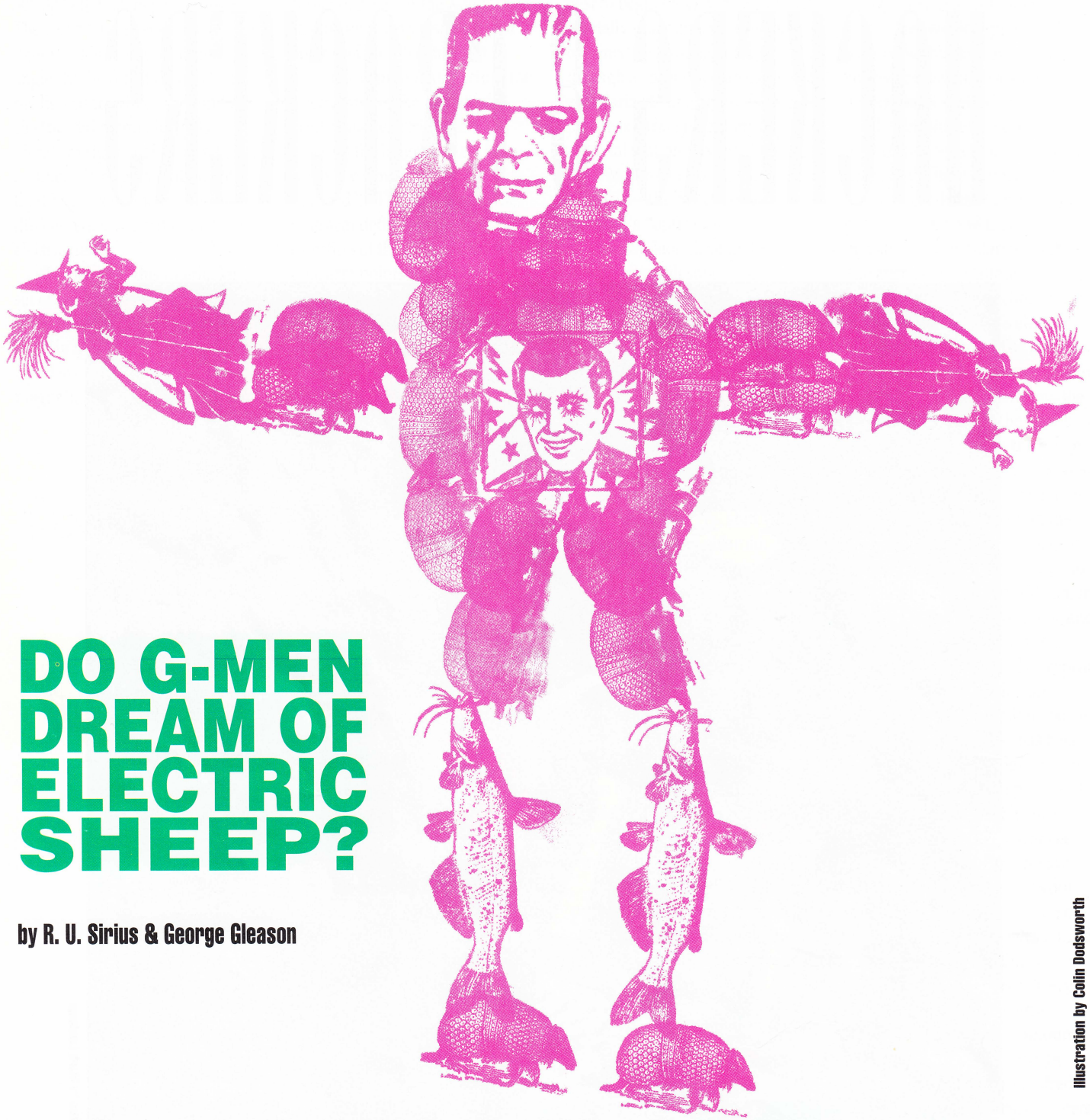
The brightness of the polarization icon indicates how strongly the light is polarized. The icon is brightest for totally polarized light and fades to invisibility in unpolarized light. The arms of the Maltese cross point in the same direction as the vibrations of the light's electric and magnetic fields. The blue arm of the cross lies along the direction of electric vibration; the yellow arm indicates the light's magnetic direction. In the fringe science literature, one runs across accounts of people who claim to be able to see colors around the poles of a magnet. Whatever the merits of these claims, there is no doubt that ordinary people can, in a sense, perceive the magnetic and electric fields that constitute a beam of light. These fields appear to us as swatches of blue and yellow light. The physical source of the polarization icon has been attributed to special pigments in the eye or to the radial pattern of nerve fibers that overlay the retina, but the true cause of bee sight in humans is still obscure.

Once you have taught your eyes to experience bee sight, you will wonder how you ever missed seeing Professor Haidinger's wonderful, multicolored crosses in the sky. Why was such a flagrant phenomenon—amounting to an entirely new human sense—overlooked by hundreds of generations of artists, explorers, and curious laymen until its relatively recent discovery (1846) by an obscure Austrian rock doctor? What other hidden human senses are awaiting discovery by alert sensory adventurers?

HACKERS & CRACKERS



Illustration by Mark Landman



DO G-MEN DREAM OF ELECTRIC SHEEP?

by R. U. Sirius & George Gleason

Illustration by Colin Dodsworth

It's no secret that mischievous young computer hackers get into trouble with the law. Occasionally, as in the case of the original legendary phone phreak John Draper aka Cap'n Crunch, they wind up in jail, although for the most part, their cyber-joyriding pranks are merely wrist-slapped. Suspended sentences. Probation. Charges dropped along with promises not to hang with the wrong crowd. Law enforcement quickly learned that it is not in their best interests to lock the hacker—and all that tricky expertise—in with a bunch of hardcore criminals. Indeed, the unmasked hacker may end up working as a security agent—for the phone company, a bank, or even some federal agency. Computer "crime" can be seen as the bush league, training for the Security Industry.

This relatively benign view of phreaking held through the first years of the personal computer industry. After all, Steve Wozniak and Steve Jobs gave birth to the PC partly through funds gathered by selling the "blue box," a

device for phone phreaking. And back before the digital revolution was taken over by the marketing departments, it was common knowledge that hackers were the backbone of the industry. Hacking is about exploration and access—exploring the limits of systems, finding what you need, whether to satisfy your curiosity or to complete some useful work. Proprietary concerns are not always treated with the utmost respect. Since hackers also tend to be pranksters, they can at times tend to be downright *dis*respectful towards authority. But a revolutionary conspiracy of self-conscious anarchists, this subculture has never been. Not quite.

Cut to 1990. A year that will live in infamy. For some unfathomable reason, agents of the law decided that this is the time to get busy stomping on self-expression. Just briefly: we had the bust of an art gallery in Cincinnati for showing Robert Mapplethorpe's infamous photos, we had police agents entering a music shop in Florida and seizing dangerous CDs, records and cassettes, we had the 2 Live Crew busts, we had Jock Sturges—a reputable photographer—busted and all of his everything seized for daring to process photos of the young nude body, and we had the US Armed Forces invasion of Humboldt County, uprooting a fistful of the killer weed to impress the president of Colombia.

It is in this context that we come upon Operation Sun Devil and the concerted crackdown against young computer hackers by the US Secret Service.

Think of this calendar of events as a kind of scorecard that you can refer back to as you read this section's interviews with such Dramatis personae ***as Craig Neidorf, Steve Jackson, John Barlow, Mitch Kapor, et al.***

Summer 1988: Hackers' Convention 4.0. CBS News shows up with prepared script intending to depict hackers as dangerous criminals. This was particularly bizarre given that *this* Hackers gathering, formed by Stephen Levy (author of the book *Hackers)* and Stewart Brand with the Whole Earth Institute, is frequented primarily by older, comfortable, relatively law-abiding computer fiends. Many of the people who were portrayed as "high in the Santa Cruz mountains plotting the downfall of the computer industry" were actually CEOs in that industry. Many more were, at the very least, major stockholders and well-paid executives in mainline companies. The dangerous-looking longhaired man seen looking at violent computer games while playing with a yoyo by millions of newswatching Americans was none other than Clifford Stoll, National Security Agency collaborator and author of *The Cuckoo's Egg*. The CBS coverage was probably the first inkling for the older 60's-generation hacker set that something might be amiss in their world.

November 1988: The Internet Worm runs wild across many of the nations' computer networks, shutting down an estimated 6,600 computers tied to Internet and causing an estimated loss of 40 to 90 million dollars. The code, written by Robert Morris, was intended to map the net. In the words of John Barlow, "It was going to go around to every node on the net and report back in and tell just how big this sucker is." But, due to faulty code, it winds up reproducing itself at a phenomenal clip, eating up all the cyberspace in its path and closing many systems. Within a day of Morris' arrest, it is revealed that his father, also Robert Morris, is the *chief computer security expert at the National Security Agency.* Those who wish to conjecture about the possible meaning of this may proceed at their own risk.

December 1988: Legion of Doom member "The Prophet" downloads a Bell South document on the administration of E-911 systems, and then posts it around bulletin board systems (BBSs) such as Jolnet. It reaches Knight Lightening, aka Craig Neidorf. Knight re-publishes it in his electronic magazine, *Phrack.*

June 1989: A group calling itself NuPrometheus league releases bits and pieces of Apple source code: the software equivalent of Macintosh DNA. NuPrometheus promises more to come. Apple has a proverbial cow.

December 1989: *Harper's Magazine* hosts a virtual hackers' conference on The WELL, a BBS whose members include a number of computer and communications industry pioneers. Hackers and cyberpunks of all stripes attend. The result is published as a cover story.

• *continued on next page*

Many who were portrayed as "high in the Santa Cruz mountains plotting the downfall of the computer industry" were actually CEOs in that industry

"What's this ?" an SS agent asked upon seeing the dread weapon of the youthful terrorist. "It's a phone machine" Acid Phreak replied

January 15, 1990: AT&T has a spontaneous near-death experience in the form of a nationwide system crash. Somehow a rumor circulates that a coven of hackers had cast the deadly spell, though AT&T denies it. For its own part, AT&T never told the public that their vital calls would go through normally if they simply dialed the five-digit code for any other long distance carrier.

January 22, 1990: Robert Morris convicted of releasing the worm which temporarily shut down Internet.

January 24, 1990: Secret Service agents raid Acid Phreak and Phiber Optik (two of the more controversial participants in the above-mentioned *Harper's Magazine* Conference), holding a gun to the head of Acid Phreak's 12-year-old sister and confiscating all his electronic equipment including CDs and a telephone answering machine. "What's this?" a Secret Service agent asked upon seeing the dread weapon of the youthful terrorist. "It's a phone machine," Acid Phreak replied. "What does it do?" the superstitious savage queried. "It answers phones," Acid Phreak confessed.

Though no charges are filed, these and other individuals are interrogated on suspicion of having caused the AT&T crash and of being key members of Legion of Doom. For the record, AT&T continued to maintain that hackers were not the cause of the crash. The alleged hackers ' conspiracy called the Legion of Doom took its name from the *Superman* movie and was, in fact, a loosely-knit group of friends with about as much formal structure as a glob of cybersocial protoplasm.

February 2, 1990: Secret Service agents raid Len Rose, aka Terminus. Rose, his wife and child, are terrorized at gunpoint, denied food and use of the bathroom. Calls to lawyers are denied, computers and other property are confiscated. Rose is eventually charged as part of the Legion of Doom conspiracy. His alleged crime: having bits of UNIX source code, something as common among professional UNIX consultants as doctors having self-prescribed medicines in their homes.

February 7, 1990: In the by now familiar Gestapo style, the SS raids Robert Riggs ("The Prophet"), Franklin Darden ("The Leftist") and Adam Grant ("The Urville" / "Necron 99"). This time, an indictment charges various federal felonies including fraud and conspiracy involving taking copies of proprietary software and unauthorized entry into the Bell South computer systems and specifically mentioned the Legion of Doom.

Bell South spends several months investigating the case before turning it over to the Secret Service, using the SS primarily as the enforcement arm of a corporate investigation, and spending 1.5 million dollars in the process. Since it's a corporate, rather than government investigation, Freedom of Information laws don't apply, raising an important issue that is sure to come up again in the future.

February 15, 1990: Craig Neidorf, editor of the on-line magazine *Phrack* is raided, charged (among other things) with publishing the Bell South E-9ll document. His computers—in essence the electronic printing presses for his magazine—are confiscated, putting *Phrack* out of business. Bell South claims that the E-9ll document is worth over $79,000.

Late February 1990: Rich Andrews, operator of Jolnet, is visited by Secret Service. Andrews' crime? Just to be on the safe side, he'd informed AT&T officials about the E-911 document which had appeared on his network. As a reward for his good citizenry, his computer equipment is confiscated. No charges are filed. Significantly, the computer also contains the electronic mail of uninvolved Jolnet subscribers, raising substantial privacy issues.

March 1, 1990: SS raids of Steve Jackson Games and its employees. Jackson is the second largest game publisher (after Milton Bradley), has published numerous fantasy-role-playing games, and was about to launch one called *GURPS Cyberpunk*. The SS confiscates computers at Jackson's offices and employees' homes. No charges are ever specified but connections between Steve Jackson's assistant, and *GURPS Cyberpunk* author Lloyd Blankenship, and the Legion of Doom were mentioned. To this date, equipment has not been returned. Jackson's company has lost over $125,000 and is close to bankruptcy.

May 1, 1990: John Barlow visited by FBI Special Agent Richard Baxter. Baxter is investigating the NuPrometheus League which he calls the "New Prosthesis League."

Barlow—who is an exquisite writer as well as the Grateful Dead's second poet—writes up his bizarre Alice-Through-the-Looking-Glass experience with the FBI man the following day and posts it on the WELL, a bulletin board run by the *Whole Earth Review,* under the name "Crime and Puzzlement":

"Poor agent Baxter didn't know a ROM chip from a vise-grip when he arrived, so much of our time was spent trying to educate him on the nature of the thing which had been stolen. Or whether "stolen" was the right term for what happened to it.

"You know things have rather jumped the groove when potential suspects must explain to law enforcers the nature of their alleged penetration."

The strangest and most laughable revelation in Barlow's piece is that the FBI had it as a matter of record that John Draper aka Cap'n Crunch, the famous phone phreak mentioned in the first paragraph of this piece, is the CEO of Autodesk. For those unfamiliar with the world of hackers and computer programmers, this would be somewhat akin to them believing that Bart Simpson is the President of Fox, 'cept Draper wasn't even *working* for Autodesk anymore. Remember. This is the Federal Bureau of *Investigation* we're talking about here. A slow 9-year-old with a telephone and 15 minutes to investigate would discover the information to be ludicrously false. This is kind of a scary comment.

May 4, 1990: Robert Morris Jr. sentenced to a $10,000 fine and 400 hours community service for unleashing the Internet virus.

May 9, 1990: The Secret Service and Prosecutors in Phoenix Arizona announce 28 new raids under Operation Sun Devil. In three days, 28 search warrants are executed in 14 cities; 42 computers and 23,000 disks were confiscated. Only four arrests are made. Most of the raids are targeted against credit code abusers and similar minor players. However, confiscations of BBSs contribute to an overall chilling effect on electronic expression and association.

Late Spring 1990: PC software pioneer Mitch Kapor, independent rancher/Grateful Dead songwriter John Barlow, John Gilmore, pioneer at Sun Microsystems, Apple co-founder Steve Wozniak, and others form the Electronic Frontier Foundation: to protect freedom of speech and expression at the leading edge of computer technology and electronic publishing.

July 23, 1990: Neidorf trial begins.

July 27, 1990: Neidorf trial ends. Defense shreds prosecution case and the trial ends with a Southern Bell employee revealing that the allegedly illicit and dangerous $79,000 document was, in fact, available to regular Southern Bell consumers for less than $30. The Government drops the case in exchange for a promise from Neidorf to stay out of trouble for a year. The price of victory for Craig: over $100,000 in legal expenses.

August 1990: Steve Jackson Games still suffering as Secret Service refuses to return all their property, provide a lawful search warrant, or give evidence of any pending indictment or other legal action.

August 1990: CPSR (Computer Professionals for Social Responsibility) file Freedom of Information Act suit in Federal District Court, seeking FBI records on the secret monitoring of computer BBSs (bulletin board systems) across the country.

August 16, 1990: Several more young hackers arrested including "Zod," who was popped for operating a BBS chat system on an Air Force UNIX computer accessed via a University computer system. Unauthorised copies of game software and system source code are found in his computer as well. Case continued to October.

As We Go To Press/Fall 1990: The Secret Service still refuses to return computers or other property confiscated during the year. In many cases, SS also refuses to reveal details of warrants *or* to file charges. Victims remain in legal and personal limbo, their businesses and careers jeopardized or destroyed.

TO BE CONTINUED, WE SUSPECT M

The allegedly illicit and dangerous $79,000 document was available to Southern Bell customers for less than $30



Civilizing the Electronic Frontier

An interview with Mitch Kapor & John Barlow of the Electronic Frontier Foundation

by David Gans & R. U. Sirius

Space may be the final frontier, but there's at least one more earthbound arena ripe for socio-political struggle before it's time to start worrying about Martian mineral rights and the exploitation of Betelgeusian guest workers. Electronics.

The United States Constitution and the Bill of Rights were created in the era of hand-set type, before the telegraph, telephone or broadcast media. Each new wave of technology has pushed at the boundaries of liberty and tugged at the coattails of authority by enabling more rapid and comprehensive dissemination of information. There's more communication taking place outside the purview of centralized authority as well as more light shed on the inner workings of government and business. For a long time now, drugs have been seen by the government as the main threat to its control of knowledge and information. Since the 1960s, the particular species of vegetable that I sometimes carry in my pocket could, if found by the wrong person, land me in jail and lose me my property.

Now it's my disk drive.

The advent of personal computers and modems, coupled with the immense penetration of the telephone network, threatens the hegemony of the government/corporate paradigm by empowering millions of individuals. In the 90's, thanks to desktop communication, it is no longer necessary to "publish" "revolutionary" documents in the old sense of the word. Information can be propagated across thousands of miles in all directions in a matter of moments and it can't be stopped short of dismantling the entire telephone system. This genie can never be put back in the bottle. But that hasn't discouraged the Enforcement Community from doing its saurian best to try.

Acting on requests from certain corporations, the FBI and the Secret Service—armed with vaguely worded warrants—have raided businesses and homes of private citizens and seized tremendous numbers of computers and related items, with very few corresponding arrests. The language on the warrants was vague because even in the rare case when the government knows what it's looking for, on the electronic frontier, it probably has no idea what it's looking *at*.

So here I am watching a beautiful July sunset from the deck of a home overlooking Silicon Valley, participating in a good-natured but urgent gathering sponsored by the two founders of the Electronic Frontier Foundation, Mitch Kapor and John Barlow. Their alliance began with an arguably pointless act: someone, probably an employee of Apple computer, "liberated" a relatively minor piece of Macintosh operating code and sent it, over the signature of "NuPrometheus League," to a number of industry figures. Mitch Kapor, founder of Lotus Development Corporation, was one of the lucky recipients. Kapor immediately inferred that the mysterious floppy was nothing more politically significant than an attempt to infect his computer with a virus, and sent it back.

John Barlow, Grateful Dead lyricist and writer about things cyber, didn't receive a floppy disk from NuPrometheus, but because he attended the fifth Hackers Conference in October 1989, he *did* receive a visit from an FBI agent regarding NuPrometheus. Investigating agent Baxter evinced a woefully inadequate grasp of the matter he was investigating.

"He referred to them as the New Prosthesis League," Barlow told the assembly, who howled with laughter. "He was looking for something called 'the ROM Code.' He didn't know what a ROM chip was, he didn't know what code was, he didn't know whether it had been stolen or what exactly had happened to whatever it was.

"And I realized that what we were looking at was a microcosm of a whole set of things that could begin to happen with government and society and computers. And it was just a little pinpoint of future shock that was going to blow up into something big and ugly if we weren't very careful about how it got managed.

"A few days later, I found out that this process was well under way in the Secret Service," Barlow continued. "They had come up with something called Operation Sun Devil and they were breaking into the homes of teenage kids, rousting them up in the middle of the night, coming in with guns, sledgehammers and, I assume, no more knowledge of the situation than Agent Baxter had when he showed up at my home in Pinedale, Wyoming."

"It's simply beyond the reach or grasp of 99.9% of the people today" Kapor added, "given the relative immaturity of the technology and the fact that there hasn't been a concerted effort made from within the industry and the academic research community to make the stuff usable. And if it's not made usable, there's going to be an increasing gulf between the information haves and the have-nots.

illustration by eric white

"That's what led us to the whole metaphor of the 'electronic frontier.' All of the good stuff that we know about is sufficiently difficult that only a few pioneers, some outlaws, maybe a few vigilantes, and early settlers, are comfortable.

"Out on the frontier, there aren't established laws or practices," Kapor continued. "We're making it up as we go along. But ultimately we've got to civilize the frontier. We have to allow ordinary folks to come and settle. We need to build the equivalent of railroads, because if we don't take the lead in doing it and it happens by itself, it's probably not going to come out in a way that any of us will really like."

The Electronic Frontier Foundation began when Kapor, after reading an article Barlow had written (on the WELL computer network) about his visit from Agent Baxter, visited him in Wyoming one afternoon. "We realized that this wasn't so much a planned and concerted effort to subvert the Constitution," said Barlow, "as the natural process that takes place whenever there are people who are afraid and ignorant, and when there are issues that are ambiguous regarding Constitutional rights.

"Whenever there's a new medium, there's always a struggle to find out whether the Constitution is going to apply to that medium, whether or not the first amendment will apply. There's now a struggle under way to find out whether free speech can be expressed in bytes and bits. And that's basically what the Electronic Frontier Foundation is about.

"We're looking at a whole range of things dealing with future shock, the anxiety of society at large toward computers, the particular anxiety of society at large toward hackers, and what I like to call the learning curve of Sisyphus— which is what happens when you've got a technology that develops faster than anybody's ability to learn it."

Shortly after the EFF reception in Silicon Valley, R. U. Sirius and I met with Barlow and Kapor to learn more.

- David Gans

An Acid Take on Digital Capitalism

JOHN PERRY BARLOW: On May Day of this year I got a phone call from FBI Agent Baxter down in Rock Springs. I said, "What do you want to talk to me about?" And he said, "Well, I'll tell you when I get there. I've got a stack of papers." And he *did* have a stack of papers.

MONDO 2000: Wait a minute. So the FBI calls you and says we need to see you...?

JPB: Well, yeah. That happens.

M2: And you thought it was neighborly to invite 'em over and hear 'em out?

JPB: Well, I thought it was probably closer to my best interest to do that than to tell him if he came I'd kill him.

So his stack of papers was about something called the NuPrometheus League and they'd taken a little snippet of Apple's ROM code and had sent it to, among other people, Mitch Kapor. Understand that Apple basically sells ROM code. I mean, they're commonly thought to sell machinery, but what they really sell is the software that's on the ROM chip inside that machinery. That's the holy mojo that makes a Macintosh a Macintosh. So Apple freaked. And they invoked the awesome forces of the FBI which, for reasons having to do with corporate culture, is closely tied in with Apple's security company. There's a revolving-door policy between the FBI and Apple's security contractor.

M2: Mitch, the person or persons who call themselves the NuPrometheus League sent this piece of code out to a bunch of people, including yourself. Why did they do that and what was it?

MITCH KAPOR: I don't have the faintest idea why they sent it to me! [laughter] I just stuck the thing in the drawer, because it was an unlabeled diskette and I was afraid of viruses.

JPB: [laughing] A disk that says "Apple Source Code" on it, it's kind of like, [seductively] "Put me on your computer."

MK: But then the story hit the papers that somebody had actually taken a small, not terribly important piece of the source code for something called 8-bit color QuickDraw and sent it out. So I looked at it again, long enough to determine that it looked like Apple source code. Then I sent it back to Apple and I thought that was the end of it. Several months later I got a call from the FBI. It was actually before John's visit.



Mitch Kapor

M2: Did you guys already know each other?

JPB: Yeah. I'd interviewed Mitch for *MicroTimes*. We became friends in the the first 30 seconds. It was one of those cosmic recognition experiences. Here was somebody else thinking some of the peculiar thoughts that I'd previously thought were mine alone... coming at it from a completely different angle.

MK: We're both interested in dislocations of consciousness because we think that's central to understanding how weird the world is—how everybody's mind has gotten genuinely bent, especially by technology... especially by digital media. John, of course, is in the process of writing a book about this.

We also had a common set of experiences in the 60's involving what I—when I speak to straight business audiences—charitably refer to as recreational chemicals, which contributed to a fundamental outlook.

M2: Ye olde acid heads' league...

JPB: Right! You got it, buster.

But *now* we're talking about that dislocation that occurs when an *entire* society looks up and finds that it doesn't know where it is, and it doesn't know how anything works anymore, and doesn't know how to deal with the reality that most of the standard, nurturing concepts that have managed to provide for us since the Neolithic Age—things like place and embodiment and community— are basically suddenly gone.

MK: I like John's one-sentence definition of cyberspace: "the place you are when you're on the telephone." It brings it home to people.

JPB: As a society, we're leaving the landscape and moving onto the map, without paying much attention to the process or the destination.

M2: Mitch, you've gone from being an acid head in the 60's to being one of the new heroes of digital capitalism. What's the view like from there?

MK: Well, before I was a digital capitalist, I taught meditation. Then I was a counselor in the psych unit of a local community hospital. I have a Master's degree in counseling psychology. So I've been all over the map. I just kind of fell into computers. I didn't set out to be Bill Gates. Bill Gates set out to be Bill Gates. My perspective wasn't shaped by needing to build a big company and make a lot of money. In a nutshell, I started this little company called Lotus and made this software product that several million people wound up buying. The little company turned into this enormous thing with thousands of employees making hundreds of millions of dollars a year. And it felt awful to me. So I left. I just walked away one day.

M2: Did it occur to you, when you walked away, that you were turning that large capitalist organism loose to do its will and...

JPB: It was already a lot bigger than he was.

M2: But if your values were offended by it, wasn't there some way to turn it around?

JPB: You're still stuck in the notion that people run these things and that they don't run themselves. Companies become their market, not their maker. Lotus is a beautiful case in point. To say that Mitch could have somehow directed Lotus in some benign way is like assuming a coral polyp can run a reef. Large businesses are collective organisms.

M2: How are they driven?

MK: They're not! That's something that John and I both keyed in on. We have this assumption that because something exists and acts, it has some central controller, some little homunculus inside it that makes the thing go. But physics is dead as a model for organizations. Biology is in the ascendant. And if you study biology, things are very decentralized, very distributed. You get emergent behaviors coming out of the workings of a whole bunch of little pieces. Each piece is pretty dumb. Organizations are like that. Still and all, I agonized over my responsibilities toward Lotus before I left.

JPB: Individuals who work in institutions are no longer individuals. I mean, there's a big difference between a solitary wasp and a wasp's nest. It's like slime mold. Institutions are paramecium-style, one-celled organisms, mostly. When it decides that it wants to cover some country because conditions are changing, all the local slime molds get together and create an organism that grows stalks with eyes on the ends, and grows cilia to move with, and suddenly it's a critter.

R. U. SIRIUS: It's called "grexing."

JPB: Yeah! It's an animal then. It's no longer a one-celled organism. And then it goes someplace and devos. It goes back down to its original constituents. This is really the perfect metaphor for what a corporation is. And to say that the individuals inside that corporation are individuals when they're acting in their corporate form is like saying that slime mold is still a whole bunch of slime mold cells. We still have this sort of Newtonian, causal, deterministic notion that organizations are machines. The CEO is up in the wheel house and there's a direct connection between the chairman's desk and the rudder.

By the way, there's also this lingering assumption that there's some disjuncture between being a digital pioneer and being an acid head. It's my perception, on the basis of having interviewed a lot of the first wave, that this is actually quite a common phenomenon.

M2: In that case, is there a reaction of old corporate America against new corporate America?

JPB: Well, the reaction is to meet it, to infect it with itself, and to create—through the use of itself as a market—a perfect replica of what was pre-existing.

M2: Apple is becoming like GM.

JPB: Oh, I think Apple's a lot *worse* than GM because Apple is still clinging to a mythology that just gets in the way. I mean, if Apple could just kind of settle in and *be* GM, everybody there would be a lot happier.

MK: It lacks the comfort and self-assurance of a mature organization which, no matter how much you might disagree with its values, has a degree of predictability. Younger organizations that are still in the throes of violent organizational psychoses become very unpredictable.

JPB: Apple is like the Chinese Cultural Revolution conducted by people in three-piece suits. Any corporation has a totalitarian quality, but people work for them because it's supposed to be safe, right? You give up your mind but get the benefit of the collective immune system that will protect you against the slings and arrows of individual fortune. So IBM takes care of their employees. They rarely fire anybody. They've got a nice retirement plan... they take care of their employees. Apple exercises much the same kind of totalitarian control over its employees and offers them *none* of the benefits. They have no retirement plan, period.

A nasty symmetry set itself up between the old techno-hippies and these young digital skate-boarders

MK: Instead they offer up the vision that they're doing something to make a difference in the world, which *used* to be true.

M2: So who benefits?

JPB: That's kind of like saying, "What good are mosquitos?" Mosquitos arise because there's room for them in the ecology. Corporations arose because there was an ecological niche that was created by a lot of things, modern telecommunications being one.

M2: So Mitch, how did you end up still thinking for yourself?

MK: I can't help it.

The Origin of the Electronic Frontier Foundation

MK: I read John's account of his visit from Agent Baxter on the

Individuals who work in institutions are no longer individuals. It's like slime mold

WELL, and it reverberated very deeply within me because it enabled me to come to terms with my visit from the FBI, which had happened earlier. It was, of course, a very disturbing experience that I hadn't been able to process. So I just sort of repressed it. It had sort of been lying in an undigested state in some empty chamber of my brain.

My experience was remarkably similar to John's. They were asking a lot of the same questions. It was hard work just getting them to understand the sequence of events I described here earlier. You know, "I had this diskette and I looked at it and I saw that it was Apple source code and I sent it back." And *that* took a couple of hours to get across. It was exhausting. And I felt bad, because it was clear to me that they weren't in a position to do what they were supposed to be doing.

I sensed danger. When you have a powerful force with a charter and a history and they're fundamentally lost—they don't understand the territory they're in at all—it's a recipe for disaster.
JPB: Meanwhile, some other things had been happening that weren't directly connected to this case, but were certainly connected to the underlying cause. I had been part of an online *Harper's* magazine forum on computer hackers. In the course of this, I'd met these cracker kids from New York and elsewhere. They were young and brash, and there had been a kind of nasty symmetry that set itself up over the course of the conference between the old techno-hippies and these young sort of digital skateboarders. It culminated in one of them downloading my TRW file with my credit history—with the implication that he could change it if he wanted to…
MK: Which wasn't true.
JPB: But I didn't know that. I was looking at life without credit. Pretty scary.

So I E-mailed this kid and said, "We've just exceeded the bandwidth of this medium. Why don't you give me a call? And I won't insult your intelligence by giving you my phone number." He called me up about 20 minutes later.

The kid that I encountered on the phone was not at all the kid who'd been strutting about in full digital regalia on the WELL. He was a kid, you know? Smart, brash, New York street-kid, but not dissimilar from what I'd been at his age. And I got to know his colleagues. They were unquestionably inclined to trespass, but I tend to think that's sort of a testosterone-based endeavor that has long been with us.

I met them in New York, and I didn't find them to be any particular threat, in spite of their willingness to go where uninvited. But at a certain point I found out that the government had moved in on one of my young colleagues and had smashed down his door one afternoon while he was out and held his 12-year-old sister at gunpoint for an hour until he showed up.

I heard about this before I had my visit from the FBI and I thought, "Well, I don't know what they did. They're probably much worse than I thought." So I didn't do anything about it until I had the visit from the FBI.
MK: Yeah, and I came along and talked to John, also. I just thought that these kids should have a good lawyer. I saw that there were powerful forces moving against them. My sense of fairness dictated that they have adequate legal representation to protect their rights. That's where it started.
M2: What does a software multimillionaire feel in common with these "digital skateboarders?"
MK: You know, I'm the same digital skateboarder that they are, only I'm a little bit older and have more life experience. I was sort of a smart, nerdy, somewhat undersocialized kid. If I'd had the opportunity to do what they'd done, I probably would have done it.
JPB: A very important point that we have to make over and over and over again is that the Electronic Frontier Foundation is not a crackers' defense fund. Trespass is, and should be, against the law for a variety of reasons, not the least of which is that you can get in there and inadvertently create mayhem.

Robert Morris [creator of the Internet worm] is an excellent case in point. Morris wanted to do something that was really kind of cool. I wish he'd succeeded. He wanted to map the net. The Morris worm was like an explorer. It was going to go around to every node on the net and report back in and tell you just how big this sucker was. Which is something that nobody knows, right? It's a cool thing to do. Somebody ought to do it. Trouble is, he screwed up. His worm wasn't well-written, so the effect was viral rather than exploratory.

That's why it probably ought to be illegal to trespass. These people are entering into sensitive places where things are fragile. But it's also important that you don't go around busting joyriders for grand theft auto. Trying to impose a million-dollar fine and thirty years in jail on them just because they've trespassed digitally rather than physically is completely out of scale. That has to be dealt with.

Where'd the Fourth Amendment Go?

M2: At the same time that your effort to bring rights and justice to the electronic frontier is happening, there's an immense tide of repression going on in all of the old traditional realms and modes of communication.
JPB: No. If you check it out, you'll find that print and speech are still pretty well protected. Where you're running into trouble is in every other medium. You're running into trouble with records, CDs, photographs, art, broadcast media, digital media…

We lost radio and television in the 20's and 30's… not a big civil libertarian time. They said, "Well there's a limited amount of bandwidth so we've got to regulate it. And in regulating it, we've got to make certain that it meets the requirements of a wide audience."
RUS: Could the Electronic Frontier Foundation possibly step back a couple of decades and try to deal with that situation?
JPB: No, because of the way in which the legal system works. It's all organized by precedent. You build up a body of case law over a period of time and pretty soon it has the same authority as it would if it were part of the Constitution. I don't think there's a damn thing we can do about the broadcast media now. And what scared Mitch and me is that we could have cases that would establish the same kind of precedent-



Photograph by Bart Nagel

John Barlow

setting effect regarding digital media. So we'd have a fundamentally limited application of the Constitution to the world of bits and bytes. And if you think about it, it's *all* pretty much taking place now in bits and bytes, at least at the developmental level. If you can restrict free speech just because it happens to occur in a magnetic medium, then it's all up for grabs.

M2: We're faced with the possibility that the Bill of Rights will be left behind with hot lead.

JPB: Much of the Bill of Rights is already gone. I was shocked to find out that the Fourth Amendment had pretty much disappeared since the last time I'd looked. I called up some lawyers regarding one of these cases and said, "As I read the Fourth Amendment, this is unreasonable search and seizure to a 'T'." And they said, "Well, you've got to understand what's happened in terms of precedents on Fourth Amendment issues. We've basically lost it." It's the death of a thousand torts. We're still pursuing it though, because most of these Operation Sun Devil search warrants were unsigned, sealed, and completely broad. They just said, "Get everything that has electronics in it and get everything that has magnetism on it."

The Fourth Amendment is supposed to prevent the authorities from taking anything from you that doesn't have a direct instrumentality in the alleged crime. So they know what a gun is, right? But they don't know what a computer virus is or where it might reside in 25,000 disks, so they take them all.

A New Market for the Secret Service

JPB: The Secret Service wants to expand into a new market. The old market—which contrary to popular belief wasn't protecting presidents, it was busting counterfeiters—moved offshore. So in order to have a reason to exist as an organization with a budget—to feed itself as a critter—they had to find some new food. They've gone into computer crime and they're doing a rather bad job of it. They're getting terrible advice from the telcos, who are using the Secret Service in much the same way that the FBI is being used by Apple. If you call the telcos and ask them a question about computer crime, you'll find yourself talkin' to somebody from the Secret Service. The Secret Service agents showed up at all these busts with telco security people. You couldn't tell them apart.

See, the government is now grinding to a complete halt, and what's actually running stuff—to the extent that things are getting run—is corporations. They're mediating the economy. They're passing the goods and services around. *And* they're doing all the control stuff, they're managing the consciousness, and now they're moving into law enforcement.

RUS: That's very much the cyberpunk vision.

JPB: Yeah, exactly.

Move the Homesteaders In

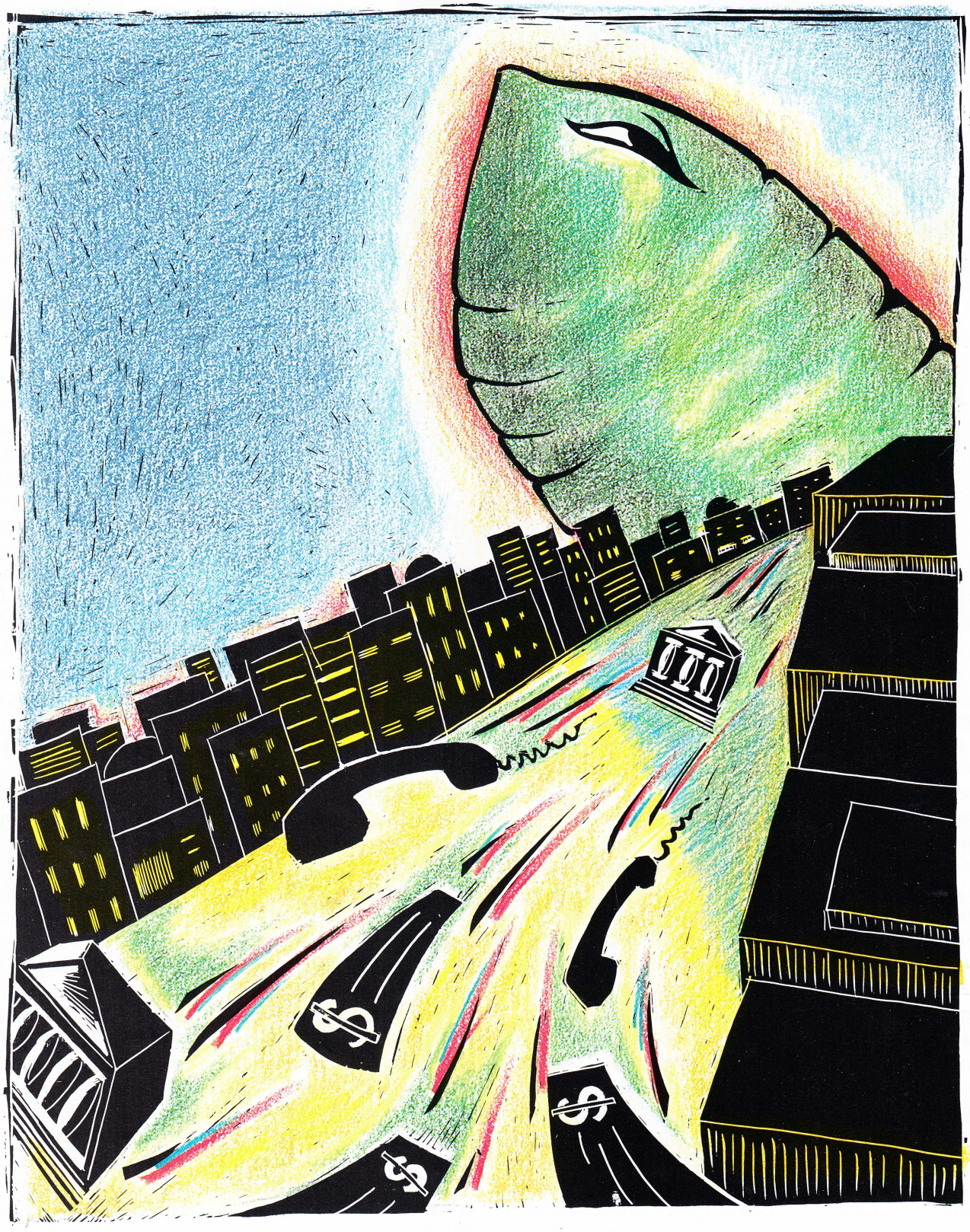
M2: So what specific areas is the EFF getting involved in?

MK: We think it's really important to do something about improving people's access to the public network. Electronic mail and conferencing has substantially expanded the scope and reach of our contacts and our community. There's one catch. You kind of have to be a Unix weenie to be able to use those particular tools to full capacity. We need to lower the barriers to entry and let ordinary folks participate in this worldwide discussion.

JPB: What we're doing is "civilizing the digital frontier." Cyberspace—or whatever you want to call that region that is defined by electronic communications and information—is presently inhabited almost exclusively by mountain men, desperados and vigilantes, kind of a rough bunch... oh, and Unix weenies [laughter]. And as long as that's the case, it's gonna be the Law of the Wild in there. And it's going to continue to have this extremely uneasy relationship with the rest of society which is growing more and more dependent on it in a very material way. You can't believe the number of things that you do every day that involve activity in cyberspace.

MK: When you use an automatic teller machine, for instance.

JPB: Whenever you make a financial transaction, really, it involves electronic data representing money. So we feel that the way to minimize anxiety, and to make certain that the freedoms we have in the so-called real world stay intact in the virtual world, is to make it inhabitable by ordinary settlers. You know, move the homesteaders in. M



Synergy Speaks:

Goodbye Banks, Goodbye Telephones, Goodbye Welfare Checks

Michael Synergy may be the first person I ever met who actually described himself as a cyberpunk—way back in the days of Reality Hackers. *"Do you want an article on how to stay free of computer viruses?" he asked. A couple of weeks later, he was up at the* RH *office. "Do you mind if it's a little subversive?" We immediately made him an assistant editor.*

Michael is probably the most explicitly political (anarchist division) of the young hackers. While the people in and around the Electronic Frontier Foundation are trying to gently reassure the body politic that the onslaught of information technology is not *a threat to the stability of the system, Synergy will tell us how it* is *indeed an assault on all fronts. His message is simply "Surrender!" What follows is a pastiche of comments he made at a conference called* Forbidden Knowledge in the Technological Era *and notes added later by Synergy in response to questions he was asked about his talk.*

R. U. Sirius

Information

On Information
Information is true capital. I can't eat gold. I can't use it to heat my house. I can't use it to cure my cold. It's only a medium of exchange. Exchange for what? Time. Skill. Information. The information economy is here and now. Ever hear the old Eskimo proverb? "Give a man a fish and you feed him for a day, teach a man to fish and you feed him for life." Education and freedom of information are the path to the future. Some of us are already trailblazing it. It's fun living on the edge.

On Theft of Information:
Information can't be stolen. Unless they've come up with something new, phenomenologically speaking. If I tell someone a fact, I still know the fact. Property laws were set up to handle tangible objects. We're dealing with raw data, information, the stuff of dreams. The whole system to handle 'ownership' is obsolete. Any system that gets set up to handle 'ownership' will already be obsolete. In a world where you can copy information, leaving the original intact, and wind up with a perfect copy, the debate over ownership is over. Remember the old joke about the drunk and the fool? How do you tell which is the drunk and which is the fool when you see the argument? Easy. Wait until morning. The drunk will sober up. The other guy is the fool, since only a fool would argue with a drunk. Only fools are arguing over 'ownership' of ideas.

On Intellectual Property:
Speaking as an inventor with some pretty sexy items both on and off the boards, this is a near and dear topic. I work hard, have a brilliant (if I may be self-serving for a moment) idea, I should make money off it, right? Certainly I should, by getting to market first and still working my ass off to come up with yet a better idea. Let's cut the crap of 'one good idea per company, OK?' Competitive edge means *staying* at the technical and marketing cutting edge, not bashing the competition with patent suits.

On the Spread of Information:
Once the word is out, you can't stop it. When I tell someone a fact, I can't be sure if the person will keep it to themselves or whether it'll end up front page news. Non-disclosures are shit, totally unenforceable. You can't tell who leaked what, when, where, and to whom. Let's give up trying.

On Browsing:
I am an information addict, a sensory junkie. I want stimulus, and I want it now! So what do I do?

Welcome to the H-Bomb of the Information Age. The ultimate lever action: remote, numerous, targetable, anonymous

I read a book a day. I listen to music, compose music, watch movies. I write screenplays, read magazines, give interviews. I talk on the phone for interaction—being the interactivist. And when I crack into computers, I browse and read peoples' mail, papers, notes, programs, etc. I'm an enquiring mind and I want to know. This is a *real* issue. I want to learn and *they* want to impose 'need to know' on everything.

POLITICS LAW & SOCIETY

ON MONEY:
You know who the most important President was? Richard Milhous Nixon. You know why? Because he took us off the gold standard. Once upon a time, money in a bank had to be related to a real world object. Arbitrarily, this was gold, since it was rare and since most people are packrats. But suddenly, the governor was removed. Money was just a bunch of bits and bytes in computers. Money became the first exploration into cyberspace. This is why the economy is messed up. This is why banks are messed up. This is why computer crime is growing exponentially. This is why the damage that can be caused electronically is so much greater. Because we stopped using reality as the 'acid test' for what was represented in our machines.

ON 'OPERATION SUN DEVIL':
Once again, the cowboys in the Secret Service have gone off half cocked. The telephone company gets them all riled up and they start loading the shotguns and Uzis. The chain of events looks something like this: a telephone switching center shut itself down, taking a lot of other switching centers with it. For hours it stopped telephone service, costing an immense amount of money. There was a bug in the revised code running the switch, a bug that was just waiting to go off and cause this problem. Now the phone companies acknowledge the bug is their fault, but they also believe that the original switch may have had some help shutting down. There is no audit trail to use as evidence, so that's pure speculation on their part. So they got scared because they finally realized that what I've been telling people for years is true—one person *can* shut down the whole phone system. So they call the stormtroopers at Secret Service and get them all rabid, and the rest is history. Except that on the phone company's part, it's not history, it's histrionics. They were scared not by the actions of a real person or group, but by the implications of their own sudden realization.

ON THE ELECTRONIC FRONTIER FOUNDATION:
I think that John Barlow, Mitch Kapor, and Steve Wozniak are good guys, but I have some doubts about their methods. The 'education' they want to bring regarding the issues is more like preaching to the choir—the only people listening right now are those who already understand the issue. And if they try to get the government involved, they'll make matters worse by validating more legislation. I would happily approve if they went strictly after the removal of *all* government involvement. But they're only increasing the FUD—Fear Uncertainty Doubt—factor. I can't see any positive consequence of remaining in or attempting to alter the existing political system. We share the same desire for freedom, but they believe that we still have a workable system, or—I might say—that politics is still workable. They seem to want to approach all the important issues as Constitutional ones. I think they should read the *Anti-Federalist Papers* for a good set of reasons why that'll never work. Remember, the Constitution was a mechanism of Big Government, with the Bill of Rights hastily added on years later. The government is *not* your friend.

Have you read Atwood's *The Handmaiden's Tale*? In the book, a Religious Right takes over the country. Since most women were infertile, the 'power elite' forced women who were fertile to bear their children. The 'radical' women, women who had had abortions, or who took a feminist stance, were sent to the wall. I think the book, an outstanding piece of literature, shows the real issue: data that you and I don't want seen by *anybody*, let alone a government official (hostile by definition), is there for the taking in computers across the country. I think that personal data, like credit reports or medical records, should be encrypted, with only the owner of the information (the person the data is about, not the owner of the machine) in possession of the key. A person wants to read your credit report? Great, *you* decide to give them the key.

On Cliff Stoll:
(Author of *The Cuckoo's Egg*, a book chronicling his keystone kops adventures with the intelligence community in pursuit of a German computer hacker.) Stoll, if you ask his friends, is a mediocre astronomer and a mediocre computer person. I think they're being generous. Cliff is unconscious. He sees the world only as it affects him. Because of what he did, a guy I knew ended up dead, burned to death on a riverbank. Cliff needs to grow up and try to grok the big picture. [ed. note: the computer hacker in Germany who was arrested by the authorities was, according to Synergy, selling the Soviets information which would have been available 'over the counter' with a good research service. 'Hagbard Celine'—as he called himself—showed up immolated on a riverbank, an apparent 'suicide'.]

On the Debate Over the Term 'Hacker' or 'Cracker':
The people who are debating over the terms hacker and cracker oughtta just get a life. The only difference is that one is employed. Or owns the company.

On Modern Justice:
Is it a criminal act to read something on a hacked computer? First, under common law, the object of a tort is to compensate the 'victim' for 'damages' caused by the action of the defendant. After establishing intent, always a nebulous concept, we have to establish actual 'damages' caused. Simply reading a file is potentially bad. On credit services like TRW, pulling someone's credit report can hurt the credit rating of that individual. What about using the information gathered from browsing to run an 'insider trading' scam? Buy stock or short it depending on what you read in the corporate mail system.

What we need here is what the justice system was set up for *in theory*: an individual analysis of each case as it pertains under the law. What we've ended up with *in fact* is a system that *extends* the law based on the analysis of the individual case, the system of precedents. It's the cart before the horse. It's also a damned stupid system.

On Criminal Evidence:
Remember the phrase "beyond a reasonable doubt?" With the wonders of the modern age, this is the end of the current legal system. No witness testimony is valid, sound recordings are manufacturable, photos are manufacturable, video is manufacturable. The jury isn't a judicial process, it's the new audience. The rules of criminal evidence are out of date, killed off by the microchip. I can see a future trial. The Defending Attorney comes into court armed with a recording of the Judge committing the crime, photos of the Prosecuting Attorney committing the crime, and a video of members of the jury committing the crime. It could easily be done. Don't you just *love* multimedia?

Viruses & Nightmare Scenarios

On Viruses:
Welcome to the H-Bomb of the Information Age. The ultimate lever action: remote, numerous, targetable, anonymous. It makes certain individuals just as powerful as government agencies. Or governments. Big deal. People oughtta just grow up instead. Viruses raise an important issue though... freedom through personal empowerment. What if we all had H-Bombs? Why should that big abstract organization known as government have one and not you? Do you trust them more than yourself? What if everybody had a weapon? What if we all had to take responsibility for ourselves and our actions? The only discipline is self-discipline.

Blackmail: for Fun and Profit
The blackmailer writes a worm that insinuates itself into a system and automatically encodes and decodes all access for the users. One day, maybe a few months after it comes in, it commits suicide and erases itself. All your files, all your data, is encrypted, and you don't have the key to make sense of it. But if you pay $$$ to the perpetrator, surely they will give you the key. If the worm is written using a public-key crypto system, it doesn't even matter if you catch a copy, you still can't decode your data on your own.

How Not to Play Fair in the World of High Finance:
Your corporate assets in-

Goodbye banks, goodbye telephones, goodbye welfare checks. How much money do you carry around in your wallet? It might be all you have left

If a system allows access to one valid user, then it's possible to break in. Just like with a room: if it has doors, you can break in

clude your data—the balance sheets, the payroll records, corporate data, and more, especially if you're a computer company. Having a virus in your core on a dead-man's switch might not be a bad idea. Whoops, here comes a hostile takeover. Just let them know that if they don't cease and desist, you'll suicide the computer system.

I Have Seen The Future and it is Unstable:
Right now, if a virus goes off, you have backups, or at least paper. But soon, we'll be dealing with things that are too data dense to make backup viable. It's getting to the point where some dataspaces are so sophisticated that they're not representable in any form outside themselves. Then what will you do when your data dies?

On Access Security:
As Uncle Sam is fond of telling me: "Integrity is like a balloon. No matter how good the rubber, the air still goes out the hole." If a system allows access to one valid user, then it's possible to break in. Just like with a room: if it has doors, you can break in. Data security is best, using a good cryptographic scheme and erasure prevention. Forget access security. It doesn't work.

On New Viruses:
I just worked out a hardcore worm. A nice feature of current networks is that there are networks hanging *off* of networks. This worm breaks into a computer and seeds itself into all the component systems. Once seeded, the worms mutate into a specific configuration and grab any new resources available on each machine. Then the worms bounce back out into the main network. The growth rate with mutations would allow for a few hundred new worms, minimum, on the network per hour. Considering that the Internet worm crippled so many machines for so long without trying, a few thousand distinct worms would shut the whole show down. Goodbye banks, goodbye telephones, goodbye welfare checks. How much money do you carry around in your wallet? It might be all you have left.

Tech Talk

On Virtual Reality:
Let me tell you a parable. Remember Smalltalk? Smalltalk was created for two reasons: to prove that computation could occur simply by manipulation of objects and communication between objects, and that the process of computation should become visible. Great goals. But the industry couldn't figure out what to do after this was accomplished, it was too big a conceptual leap. It took the concept of a graphical user interface (GUI) to make the concept accessible to the folks at home, and then comes the sudden onslaught and acceptance of object-oriented systems. The concept of 'cyberspace' needs the same intermediate step. There has to be perceived value for the everyday user on an everyday box to help this concept get moving. Right now, nobody has the faintest clue as to how to deal with data in three dimensions. You have to walk before you can run.

On Intelligence:
The first person who invented a bow and arrow was really amazing. Not only did this individual make a great conceptual leap, but also helped others along. Intelligence is the communication of processed information. This means 'value added,' boys and girls. It means that people should stop sitting on their brains, and stop trying to make money by shuffling paper, and instead get out there and *do something*.

People to Watch:
Pay attention to what these people do, since they're pushing the envelope… Nicholas Negroponte and the crew at the Media Lab, Scott Fisher and Brenda Laurel with their projects in Telepresence, Eric Gullichsen (who will find his way to market with something one of these days), Todd Rundgren, Mitch Kapor with his advocacy of software design, Danny Hillis at Thinking Machines, Eric Drexler and his nanodevices, and the mysterious stranger in the garage with a new product that nobody expects.

And me, of course… 

An Interview with Craig Neidorf

Freak by PHRACK

by John Perry Barlow

The following interview took place in Cyberspace. EFF co-founder John Perry Barlow encountered Craig Neidorf (whose legal difficulties are discussed elsewhere in this issue) on the WELL, the Sausalito-based online community that has become a major forum for discussions of digital liberty.

Using the WELL's "send" function, interacting only in ascii, Barlow and Neidorf typed the following conversation at one another.

REDISTRIBUTED INFORMATION

MONDO 2000: OK. For the reader who just got off the boat, what was *Phrack* and who was its audience?

CRAIG NEIDORF: *Phrack* was an electronic newsletter for students and professionals interested in computers and telecommunications. Many articles dealt with system vulnerabilities.

M2: That seems a little disingenuous. Wouldn't it be safe to say that many of your readers were interested in system vulnerabilities because they intended to make use of them?

CN: It's quite possible that some readers made use of them. I generally refrained from asking what these subscribers did in their personal life.

Computer security professionals also read *Phrack* so they could learn the types of vulnerabilities that some computer users might exploit.

M2: In other words, you assumed a fairly neutral posture regarding how the information was used.

CN: That's correct. *Phrack* really just re-distributed information that was already available publicly, if you knew where to look. If someone was really out to do harm, they could've found better resources than *Phrack*.

I mean, I was accused of conspiring to *destroy* the 911 system in the United States!

M2: In all your dealings with crackers, did you ever run across anyone who willingly destroyed or changed files?
CN: I've been told many a tale about unauthorized access to computers, but if anyone willingly damaged or changed files, they kept it a secret from me.
M2: Where does the public perception that crackers are driven by malign intent come from?
CN: Government press releases and reporters who don't understand what the computer subculture or computer underground is all about.

I mean, I was accused of conspiring to *destroy* the 911 system in the United States! This could not have been further from the truth.

A BUREAUCRATIC DOCUMENT

CN: On January 18, 1990 my life changed forever. On that afternoon, I was met by agents from the United States Secret Service and Southwestern Bell security. Believing I had nothing to hide, I answered all of their questions truthfully and was given the impression that I wasn't in trouble. I later learned that what you say doesn't really matter, it's what they want to make out of it. They'll interpret it to fit their own preconceived notion.

So the following day, I got my first look at a real federal search warrant. It was for my room.
M2: Did you have any idea what they were busting you for?
CN: No, not at first.
M2: Let's talk about the E911 file. What was it and why'd ya wind up publishing it in *Phrack*?
CN: It was a bureaucratic document describing the administrative procedures and responsibilities of some of the departments in the phone company. I got it late '88 and early '89 from a hacker named Robert Riggs, as an article submission. Although infinitely confusing and full of transmission errors, I edited the file back together and trimmed it down. The text file appeared in the February 1989 issue of *Phrack* (24).
M2: What about the file made it interesting enough for you to publish?
CN: We'd never received an article concerning E911 service before, so originality was in itself a good enough reason. I was hoping that the file might help provide a better understanding of ANI (Automatic Number Identification). The most interesting part of the document was the glossary of terms.
M2: Was there anything there that would've made it possible for anyone to disrupt 911 service?
CN: Although the folks at Bellcore and BellSouth would like to have everyone believe otherwise, the simple answer is *absolutely* no. The article had no computer information, no access codes, and no telephone numbers to any system or office in the phone company. Every piece of information printed in *Phrack* concerning 911 was already publicly available in *many* places... not least of which are documents sold (at *very* low cost) to the general public by Bellcore itself.

M2: I got interested in your case as a violation of the First Amendment. Do you think that the Secret Service would have confiscated your equipment and put you on trial if that equipment had been a printing press instead of a modem?
CN: Maybe not. But I think it may have more to do with the fact that *Phrack* was a very small publication. Law and justice often seems to come down to: "how much justice can you afford?"

I think they tried to step on my First Amendment rights because they thought they could get away with it.
M2: There's been a lot of confusion about the agreement you eventually did reach with the government... the so-called "pre-trial diversion." Could you explain that?
CN: The pace of the trial was so slow that it appeared that I'd be at it for *at least* two more weeks, probably more. The financial expense was enormous, as was the emotional stress.

The pre-trial diversion allowed me to maintain my innocence and I had little to lose by agreeing to it. I'm supposed to speak with a pre-trial officer once a month to verify that I'm not in new legal trouble. That's pretty much it. The government can re-file the original charges against me if I'm arrested for fraud or computer related crimes over the course of the next year. I've kept out of trouble for roughly 20 years so I think I can handle one more.
M2: OK, you published an innocent document, which you had a constitutional right to publish. You demonstrated as much in court. The government essentially turned tail in the middle of the trial and fled. You're vindicated. Yet this episode has cost you and your parents.
CN: I was forced to sever ties with my closest friend during the course of events surrounding my case. I was suspended by my fraternity and nearly expelled. I was threatened with disciplinary action from the University of Missouri. My parents and sister were emotionally devastated. I had to drop over half my course load in school. I may never overcome the resulting financial grief. I've yet to see a final breakdown on my legal fees, but I'm told that my bill peaked at over $100,000 and that is not including the $8,000 that went to my first attorney in St. Louis or the expenses of travelling to and from Chicago. M

Parties interested in contributing to Craig Neidorf's defense costs can send their contributions to:
Katten, Muchin, & Zavis
525 West Monroe Street Suite 1600
Chicago, Illinois 60606-3693
Attn: Sheldon T. Zenner

Anyone who does decide to send in a check, should be sure to make a notation in the memo section that the donation is to be credited to Craig Neidorf's account. Craig would like to express his sincere appreciation for any contributions. •

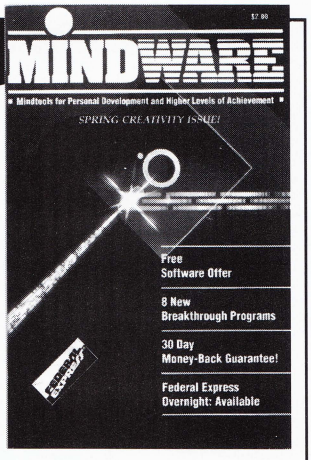
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for a message from "The
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A Message to You from Legion of Doom Member "The Mentor"

Who or what exactly is this "conspiratorial hackers gang" that calls itself "The Legion of Doom?" According to those in the know, legend of the Legion has been exaggerated in accordance with authorities' need for a major threat. LoD is really just a loose alliance of a very few young computer hackers. I was told by several people that the one who calls himself "The Mentor" is the Legion's most eloquent spokesperson and that I could find a couple of manifestos in back issues of Phrack. *The following is a segment from "The Conscience of a Hacker," written in 1986.*

R. U. Sirius

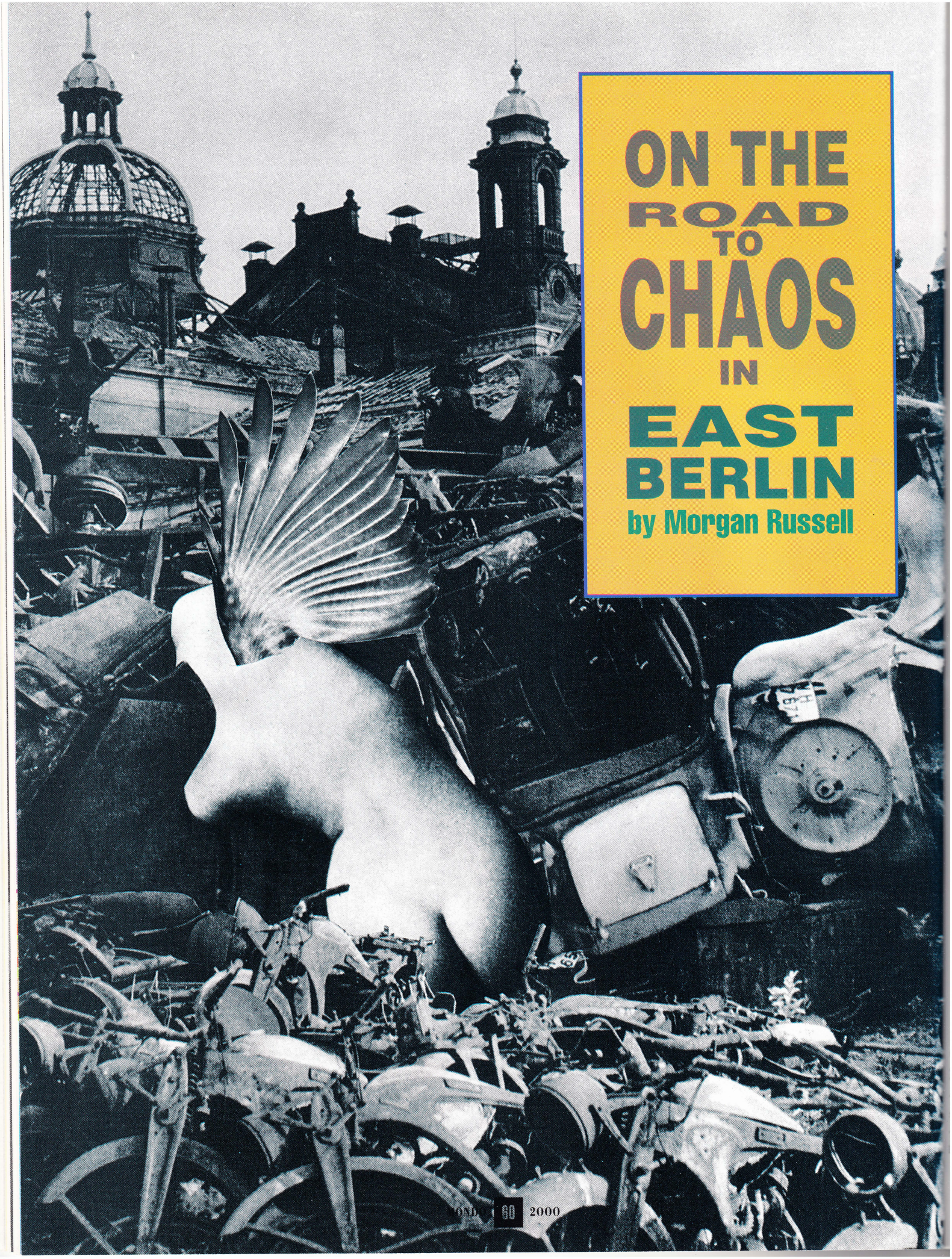
This is our world now... the world of the electron and the switch, the beauty of the baud. We make use of a service already existing without paying for what could be dirt-cheap if it weren't run by profiteering gluttons, and you call us criminals. We explore... and you call us criminals. We seek after knowledge... and you call us criminals. We exist without skin color, without nationality, without religious bias... and you call us criminals. You build atomic bombs, you wage wars, you murder, cheat, and lie to us and try to make us believe it's for our own good, yet we're the criminals.

Yes, I am a criminal. My crime is that of curiosity. My crime is that of judging people by what they say and think, not what they look like. My crime is that of outsmarting you, something that you will never forgive me for.

I am a hacker, and this is my manifesto. You may stop this individual, but you can't stop us all.

The Mentor

Illustration by Michael Swaine



ON THE ROAD TO CHAOS IN EAST BERLIN

by Morgan Russell

"Chaos. It's more than just a name. It's our way of doing business!"

Germany's Chaos Computer Club is known in the US primarily for its incursions into U.S. military and NASA computers (see Clifford Stoll's *The Cuckoo's Egg*). Then there was the well-publicized information-for-money deal with the KGB that got busted. The latter was perpetrated by persons who, while not official club members, are at least within the Chaos Computer Club's ambit. Little more is known about the Chaos group outside Germany.

Chaos members who might enlighten the rest of the world as to the nature of their organization seem to be nonexportable. One of their better-known members, Steffen Wernery, was arrested on charges of computer vandalism on his arrival in Paris where he had a speaking engagement. He was imprisoned for months. Other well-known members are understandably loathe to leave Germany.

Contact between the Chaos Computer Club and the East Berlin Computer Club was established at the CCC's Christmastime '89 Kongress in Hamburg. When I received calls from Hamburg and Amsterdam alerting me that the next CCC Kongress was imminent and to be held in the "East Zone," as the West German computer security journal *Daterschutz-Berate* quaintly termed it, I immediately left for Europe.

Arriving in Amsterdam, I learned that I was a full month early. I suspect my informant was a bit hazy on the exact dates simply because he wanted an *Amerikan* around to talk to. No matter. I purposefully occupied my time doing preliminary fieldwork in Amsterdam, checking out its hacker underground, squatters' movement, pirate radio and TV, and the newly identified Anti-Media Movement

"Destroy Media!"

—Battle-cry of the Anti-Media Movement

I got my first glimmer of the Anti-Media Movement talking to a member of a group known as **ADILKNO** (The Foundation for the **Ad**vancement of **I**llegal **Kno**wledge). ADILKNO publishes manifestoes in a hyperintellectual art and media journal, *Mediamatic*. A magazine for the well-read polyglot, its matter is well-nigh impenetrable without a thorough knowledge of Baudrillard, Virilio, Bataille, and Eco, *for starters*. Its motto is, "We watch media like others watch TV."

ADILKNO first proposed its attack on media in a Squatters' Movement document: "By isolating the media, we will reach many *more* people! Within the movement, many feel we must give our opinions to the press. The time in which we can reach our goals through public opinion has long been over!"

ADILKNO believes a "massive defection to reality" is occurring now that *everything* seems to be covered by the media. "The increasing need to make history in a hobby or tourist atmosphere, away from work, is consciously placing the media in the shadow of the event. For the moment, people have no more time for the media... Beyond the media traps, people clear the way for themselves to *do the right thing* elsewhere. In Western museum cities, an avant-garde has formed the anti-media movement, which puts an end to all connections under the slogan, 'Let's pull down another media!' With disappearing acts, it creates temporary and local media-free spaces... It is a preëminently secret movement because it carefully keeps itself out of the press and makes its existence known only through jamming and sabotage. All events that don't appear in the media are claimed as a victory by the movement... The survival strategy of the media is to remain more interesting than reality." Like that.

In the newly published *Movement Teachings: Squatting Beyond the Media* (as yet available only in Dutch), Geert Lovink and Arjen Mulder describe the "outer-medial experience" as "making history on the streets through 'immediate' (i.e. 'media-free') contact."

The Anti-Media Movement is contentless. It can only be discerned, in Lovink and Mulder's formulation, as "curious cuts in the data stream." It is a question of "how we should read the gaps. Is it an accident or the Anti-Media Movement?" One needs "an eye for it."

Hoping to catch traces of the meaningful gaps of the "AMM" at the CCC Kongress, I mobilize special forces: DFM Radio-Televisie.

"You Want Information or Deformation?"

DFM stands for "Deformation." DFM Radio-Televisie is the most

Illustration by John Borruso

Amsterdam's most unplugged performer, he could always manage with bullhorns, a bayonet on his guitar, and twenty kilos of fresh dog turds

radical of the pirate broadcasters in Amsterdam. It's staff brands the other pirate broadcasters, (whom anyone else would describe as anarchists), as "proto-yuppies." Confronted with anything short of total chaos of the airwaves, they sneer derisively, "That's what central heating will do to you!", flip on their 180-watt transmitter, tune to the frequency of the offending ten-watt station, and give it a lesson in the beauty and purity of Noise.

For the moment, DFM is housed in "Warner Squat," the former Warner Brothers building in Amsterdam. "Warner Squat" is a three-story, tile-roofed, brick building with all the amenities: screening room, walk-in film vaults, marble, stained glass. This turns out to be my base of operations for my month in Amsterdam.

Test-Case is the director of DFM. In his "industrial" phase, Test-Case was famed for staging "fake riots." For years, he collected sounds at real riots: rolling tanks, snarling police-dogs, cries of panic and anguish, and frenzied barricade-building. At his performances he would blast the crowd with these sounds, highly amplified. He would exhort them to riot, often successfully, and then would record the resulting riot for future recycling.

In his punk-revival period, Test-Case was the most frequently unplugged performer on the streets of Amsterdam. He could always manage, however, without electricity, using such simple expedients as bullhorns, a bayonet on his guitar, and no less than twenty kilos of fresh dog turds to fling.

You can see now why his DFM Radio Televisie was the video crew to take with me to East Berlin. After all, it may take the Anti-Media to catch the Anti-Media.

The "People's Police"

An East German policeman is standing in the bloody middle of the Autobahn fast-lane somewhere near Potsdam, waving a white baton. We are blithely hurtling towards him in a happily screaming, rented Peugeot traveling 150 km/hour. Chanting Tibetan monks, in reverse and overlaid with speedmetal passages and telephone exchange noise, are pumping from a portable cassette deck on the dash. Test-Case is at the wheel. He's a tightly sprung, angular young man in a "Mutoid Waste Company" T-shirt with a grown-out blonde mohawk lying dormant on his crown like a cockatoo's folded crest. Test-Case decelerates dramatically as the cop imitates a finalist in a baton-twirling competition. Our abrupt stop, a bare meter from the cop's knees, sends our fellow traveller, the somnambulant DFMer Bastiaan, onto the floor and into a fresh spate of scabies-scratching. We are directed to a rest area.

We pull up beside a curtained *Volkspolizei* ("People's Police") microbus with a large DDR seal (a compass superimposed on a hammer in a ring of ribboned grain which many say actually depicts a secret police spyglass) emblazoned on its side. A family nervously packs up the picnic lunch they'd been sharing 'round the open trunk of their "Trabbie." A man wearing mirrored aviator shades peers 'round a curtain edge from the interior of the police microbus while his companion, an obvious steroid abuser, takes our papers, growls that we've been travelling grossly in excess of the 100 km/hour speed limit, and returns to the microbus. We wait as the "People's Police" examine our papers and do more peering.

"Maybe I just tell this wanker this car doesn't go that fast," says Test-Case with inappropriate swagger as the cop with the Louisville Slugger stride beats it back to our car. This story would be highly suspect. Our velocity had been such that the string of particolored, plastic-bodied Trabants we had been passing had looked like a strand of Mardi Gras beads. I am irresistibly reminded of the *last* ride I took with this crew. Dutch police in a fluorescent-orange, turbocharged Mercedes had appeared suddenly, pulled us over, and confiscated our car.

I steer Test-Case away from a prompt pulping with "Nee, Test-Case! Nee! Nee!! Just *look* at him! He's wearing the head of a Rotweiler!"

The House of Young Talent

For the balance of the drive to East Berlin, Test-Case fills my dyspeptic silence with assurances that the 150 mark ticket can be paid in Eastmarks, the currency that looks as if it's come from a Monopoly game—tiny bills with grain threshers depicted on them and aluminum coins that can be bent with your bare hands. They are worth one-fifth the value of the redoubtable Westmark. The subject changes only as we reach East Berlin, where Test-Case scrutinizes the buildings closely. "Look at *that* one! It's perfect!" What he means is "eminently squat-table." I feel as if I'm riding with a real estate broker as he points out the squatterly possibilities of numerous (far *too* numerous) properties.

We finally arrive at our destination: das Haus der Junger Talente (the House of Young Talent). Test-Case feels our chances for free admission are directly proportional to the bulk of equipment we haul in with us. Burdened with an impressive array of lights, tripods, cameras, cables, and equipment bags, and some personal luggage for good measure, we stagger in.

At the door, a person armed with a walkie-talkie looks us over.

After we pay the full admission, Polaroid photos are taken of us, stapled onto name tags bearing the Chaos emblem, and stamped with the Chaos seal.

Knowing that Chaos events swarm with intelligence agents, I leave the line for my name blank—at least until I can get inside and evaluate the scene. Wandering through the immense labyrinth, I find hundreds of people wearing blank name tags. The ones that *are* filled-in bear highly improbable names. No one is going to make an intelligence agent's job easy here. Such anonymical measures are second-nature in a country where one of every four people were informers on the Stasi (Secret Police) payroll. Some rooms have signs reading "PHOTOGRAPHIEREN VERBOTEN!" posted outside their doors.

I pause to consider what appearance I'm presenting to the other Kongress attenders. A mirror reveals a man of roughly thirty with a hat pulled down to the top of his dark glasses, wearing an extra-long, buttoned Burberry trenchcoat extending to his boot-tops and a blank press badge. In short, I've arrived with *all* the spook-accoutrements, save a Minox subminiature, handcuffed Halliburton attaché, and an underarm bulge from a Walther PPK. No *real* agent would dare dress this way, in full Spion-drag. Bolstered by the realization that it will be taken for a pseudonym anyway, I add my real name to the badge.

"This is 'Reality Hacking!'"

—Steffen Wernery

The Kongress opens with the statement, "Holding a CCC Kongress in East Berlin is true 'Reality Hacking.' " R. U. Sirius' expression has gained currency over here.

There are few computers in East Germany and no laws against hacking yet. East German officials are not nearly as concerned with a large gathering of hackers as the humorless and paranoid Western authorities. They have other things to worry about.

East German life is in total flux. Turbulence, uncertainly, and improvisatory reality is attractive to hackers. Chaos is their very medium. ("Chaos. It's more than just a name. It's our way of doing business!")

There are approximately 600 people attending the Kongress. None of the Chaos members I ask knows how many people are in the organization. I'm told that the name tags are deceptive. They merely give the *appearance* of organization, camouflaging a deeper chaos. If pressed, most attenders describe themselves as "interested observers" rather than official Chaos members. Nearly everyone is a "computer security expert." No distinction is made between designing and cracking security systems.

One room has been set up as an archive where hacker and anarchist literature in French, German, and English can be read and photocopied. Other rooms are filled with computer equipment and telephones. There are lectures, panels, and workshops on The Creative Use of Technology, Data Security as Human Security, Information Ecology, the Power of the Media, Freedom of Information, Copyright, Viruses, Enlargement of Civil Communication Structures in the DDR, Mind Machines, and Virtual Reality.

Cognitive Dissidents

The house phones were made in 1963 (their vintage stamped on their underbellies), and it's extremely difficult to place a call to the West from them. It may take an hour to get a line out *if* one can get a line out. The lines are pretty much all bugged. Some, with multiple bugs, have seriously degraded sound quality. The phone company runs newspaper ads offering free bug-removal. Used Stasi surveillance equipment is available in modestly priced, sealed case-lots.

"Chaos organizers" sounds like walking oxymorons. They manage, however, to keep uninterrupted communication with the West as they stroll the halls with 10,000-Westmark cellular phones operating on gold-plated chip-cards. "Be careful with that card! Someone could easily give me a mega-phonebill," warns the person who lends me his unit.

Every presentation draws a silently listening capacity crowd. Information on "brain machines" and the "Data Glove" is eagerly drunk in by the East Germans. The idea of Virtual Reality is readily embraced as a better telephone system

Appropriately, at this point in the transmission, Mr. Russell—who has taken to living in Transylvania—disappeared. Last we heard, he had sponsored a VR congress in Linz, Austria, where he stayed in A. Hitler's old favorite hotel room. (Rumors that he happened upon the actual *Spear of Longinus while digging up the floorboards after having ingested too many Ritalins are—we assure you— total hype. R. U. Sirius has the genuine article himself, having spotted it unrecognized at the auctioning of Andy Warhol's personal affects.)*

Anyway, who are we to say that the Anti Media Movement should *be covered in the media? But, perhaps, if Mr. Russell emerges from his Transylvanian hideaway, we will present this saga in a future issue.* M

I've arrived with all the spook accoutrements save a Minox subminiature and an underarm bulge from a Walther PPK

The World's Oldest

SECRET CONSPIRACY



Fronted by Steve Jackson Games, Inc.

Thanks to the Secret Service, Steve Jackson Games has gotten plenty of hard-won press. But what about Steve Jackson himself? Who is he and what was his adventure game company up to before all this started? What effect has the Great Hacker Raids of 1990 had on them and what are their plans for the future?

Gareth Branwyn

IT'S ALL IN THE GAME

MONDO 2000: How did you get started in game publishing?

STEVE JACKSON: Well, I got started playing games in college. When I got out of college, while going to law school, I answered an ad in the paper from a local gaming company called Metagaming. I didn't get the job, but later they accepted an original design of mine called Ogre, which was about a giant futuristic killer tank.

M2: So when did you start Steve Jackson Games?

SJ: In 1980.

M2: What was the first SJ Games release?

SJ: *Raid on Iran*, which dealt with the question of what would have happened if they had actually gone in. Then there was *Kung Fu 2100*, which was way-out science fiction. And then we did a game called *One*

Page Bulge. It was a wargame covering the Battle of the Bulge with all the rules on one sheet of paper.

M2: Oh yeah, that was a great game. What's your biggest selling game? Is it still *Car Wars*?

SJ: Yeah, *Car Wars* and the *GURPS (Generic Universal Role Playing System) Basic* are our biggest sellers.

M2: What are some of the other games in the SJ Games line?

SJ: Well, of course there's *Illuminati.*

M2: How did that come about? Were you a fan of *The Illuminatus Trilogy?*

SJ: Oh yes! That came about when Dave Martin [the guy who did the cover art for the game] and I were drinking wine and talking about life, the universe and everything.

M2: Ooh, one of my favorite drinking conversations!

SJ: Right. Anyway, the subject got around to how you could make a game out of the Shea and Wilson books. I didn't think you could do a game based on the actual characters and events... what with yellow submarines, Discordians and a giant octopus running all over the place. It would be too tough. A few days later, I was driving someplace when it occurred to me that you could build it all around a deck of cards. After I got the car under control...

M2: (Laughs)

SJ: No really! I sat there in the front seat and started taking notes. I realized that rather than trying to use the world that Shea and Wilson had envisioned, I would go back to their source material.

M2: You mean basic fear and paranoia?

SJ: Yeah right. No, I mean the *Principia Discordia*. Did you know that it actually exists?

M2: Oh yes.

SJ: A lot of people don't. Anyway, we decided to focus just on the conspiracy theory aspects of *Illuminatus*. After that, the creation of the game became absolutely simple.

M2: I heard you're developing a GURPS worldbook based on *The Prisoner.*

SJ: It's already out.

M2: Oh really. How's it doing?

SJ: People seem to like it and it's doing well, considering it's a sub-genre of a sub-genre. We only printed 8000 copies and when they're gone, I doubt we'll do another run.

M2: Do you still get a chance to play games for fun, or is it all business?

SJ: It's all for business now. The only time I really get to game is when we go to game conventions.

M2: What are your favorites?

SJ: Well, in terms of my own, *Ogre* and *Illuminati*. And, I like *Axis and Allies* from Milton Bradley quite a bit.

M2: How did the Generic Universal Roleplaying System (GURPS) concept come about?

SJ: Well, the basic idea behind GURPS was this: any roleplaying game, regardless of genre, has a system for making decisions about how the characters behave in the game. There's a system for creating the characters and resolving various kinds of tasks—things like: was the character successful at jumping across the ditch... or whatever. Now each game system, unless they totally swipe from D&D, comes up with a different way of dealing with all this. I found this totally obnoxious. I realized that most games, regardless of the genre (fantasy, sci-fi, horror,

GURPS Cyberpunk

by Gareth Branwyn



So what is the game that caused all this controversy really like? Well it's probably not what the Secret Service had in mind. (One can imagine the Feds sitting around late at night, playing Cyberpunk, waiting to be taken over by some spell of subversion hidden within its pages.)

GURPS Cyberpunk isn't really a game at all. It's a "Sourcebook" for a larger game called GURPS (Generic Universal Role Playing System). GURPS is a set of roleplaying game rules that apply to any adventure setting or time period. Most roleplaying games are specific to a genre (fantasy, sci-fi, horror, super heroes) and you need to learn a whole new set of (usually complex) rules for each game. The GURPS Basic Set covers all the rules that are universal to these different genres and then presents genre-specific rules in supplemental books. GURPS Basic includes the main game mechanics of character creation, combat, and methods of task resolution. The rules are structured so that you can start simply and add more detail as you go. Sections cover character advantages/disadvantages, skills, vehicles and equipment, and information on creating your own adventures.

GURPS Basic is clearly designed, heavily indexed, and arranged to allow easy access to the rules while playing. All you need to play is a pile of six-sided dice, some paper and pencils and a small group of willing eggheads.

GURPS Cyberpunk is a sourcebook that can be used with any of the SF oriented GURPS worlds. It includes a set of additional rules specific to cyberpunk adventuring, such as cyberwear technology, net running, and brain implants. Character types include techs, reporters, spies, mercenaries, and net runners. The writing in GURPS Cyberpunk is excellent and obviously penned by a fan of the genre. There are extensive side-bars on many aspects of the milieu, ingenious rules for navigating and adventuring in cyberspace, and a bibliography of cyberpunk material.

GURPS is available at most hobby/game stores and should be available at your local Waldenbooks or B. Dalton. You can also write the company directly at SJ Games, PO Box 18957, Austin, TX 78760. M

As soon as they announce that skull implants are available, I'm gonna line up for mine. I'd like to add a few languages, be able to go without sleep...

etc.), need pretty much the same rules, so you could get that out of the way easily and start playing. So why not make one generic system of rules and a series of worldbooks that tailor those rules to specific genres?

M2: So the Cyberpunk game is one of these modules?

SJ: Well, I don't like the term "module." It implies a kind of faceless interchangeability. We call the publications that describe a gaming background a worldbook, and those that provide information that can be used in a variety of worlds, a sourcebook. Since the Cyberpunk information can be used in any of the GURPS Sci-fi worlds, it's a sourcebook. I don't like the word "scenario" either, which comes from wargaming.

The Cyberpunk

M2: Why did you do a *GURPS Cyberpunk?*

SJ: We had a bunch of cyberpunk fans around here and we really wanted to play in a cyberpunk-type world. It went through three different writers. The project kept going out and not coming back. Finally, I said: "Lloyd (*Ed. note:* Lloyd Blankenship is author of *GURPS Super* and a legendary hacker), why don't you just do it?"

M2: Is Cyberpunk—not the game, but the whole genre—of personal interest to you?

SJ: Oh yes. I think we'd better read about that world because we're probably going to be living in it. It lays out a very clear path to our future.

M2: Well, that was going to be my next question. I too believe that the worldview running through Cyberpunk has a lot to say about surviving an increasingly alienating world. To me it's good cultural criticism.

SJ: I don't know if the future is necessarily going to be cyberpunk or cyberprep, but it's going to be cyber-something. And as soon as they announce that skull implants are available, I'm gonna line up for mine.

M2: Oh yeah? What "moddies" do you want?

SJ: I'd like to add a few languages, be able to go without sleep, and obviously, I'd like to get a direct neural interface with my computer. That would be great.

M2: What cyberpunk books or movies have you found inspiring?

SJ: Definitely *Blade Runner*—for the look more than the writing or the acting. *Max Headroom* for everything except Max himself. I think they could have just dropped Max out of the show altogether and we wouldn't have lost anything. I of course liked *Neuromancer* and *Count Zero* and Gibson's short stories. *Mona Lisa Overdrive* didn't add anything for me. And Sterling is great... absolutely.

M2: I hear that you went to the Cyberspace Conference in Austin?

SJ: No, I was planning on it, but I wasn't able to. Lloyd was there.

The Secret Service Raids

M2: How bad a blow has this whole affair been to SJ Games?

SJ: It's been really bad. We've lost an estimated $125,000 in sales and we had to lay off eight of our employees. We're now on the verge of bankruptcy. If we don't get $20,000 in the next few weeks, I'm going to have to file.

M2: Do you feel that you've been dealt with fairly in the media? With all the other distortions that have been rampant, the information about your part in this drama seems rather straightforward.

SJ: I think so. In general, some of the press coverage has been grossly ignorant—written by people who don't know what they're talking about. And they insist on quoting people like Gail Thackery, Assistant Attorney General from Arizona, who lumps all types of hackers and computer users together and then insists on calling them white-collar criminals.

M2: The first time I talked to you, early in the course of all this, everyone seemed to be scratching their heads trying to figure out why on earth the Secret Service would be bothering SJ Games. But as the weeks wore on and more information began to emerge, I found out that the author of GURPS Cyberpunk, Lloyd Blankenship, was a "reformed hacker" who still ran a hacker BBS out of his home and was alleged to have been "connected" with the Legion of Doom...

SJ: Well, he ran the Phoenix Project for a long time, but it wasn't really a hacker's board. It was meant to be a forum where hackers, security professionals and feds could get together and talk. He had that type of dialogue going on there.

M2: But did the Feds actually log on there? I heard that he invited them. Did they ever show up?

SJ: I don't know. They were definitely invited in. I can't believe that they weren't at least monitoring it. Every other board seems to have been monitored.

M2: Anyway, when I read that about him, it wasn't as hard to figure. The Secret Service gets wind of the fact that Lloyd is publishing a book, so they decide they'd better have a little look-see before that thing hits the streets.

SJ: That may very well have been it. We're waiting for that warrant to be unsealed so we can find out what the reasoning was behind it... if any. (general laughter)

It seems likely that they started to come after Lloyd and, for some reason, decided to come after us too. Or it could be that they decided

our Illuminati BBS, which we run for our customers, was in fact a hacker's board. Or another possibility is that they heard about Project Phoenix and wanted to crack down on it. Those are three very good possibilities.

M2: Well, here's another wrinkle. Somebody recently told me that phone companies, corporations, and government agencies, are hiring people to scan boards looking for signs of criminal activity. When they find something that looks suspicious they spoonfeed it back to their bosses. Can you imagine some dumb kid stumbling onto the Illuminati BBS and finding material on cyberpunk and data cowboys, thinking it's all real and sending it, out of context, to the Service? Boy, talk about playing into their paranoid fantasies of an organized hacker cult.

SJ: Yeah, when you log onto the Illuminati board it says: "Welcome to THE ILLUMINATI, Online home of the world's oldest and largest secret conspiracy. Fronted by Steve Jackson Games Incorporated." (Laughter)

M2: I guess that would just about do it. Did the Secret Service really confiscate your laser printers?

SJ: They took one laser printer from here and one from Lloyd's house.

M2: What on earth did they think you were going to do with them?

SJ: There've been several theories about that, each assuming different levels of intelligence. First of all, they may just be in the habit of grabbing everything. Someone suggested that, since it's a printer, they might have thought they could read the ribbon on it. Of course, a laser printer has no ribbon. Or, maybe they took the full setup of equipment so that they could use it in their offices.

From GURPS Cyberpunk: The Sourcebook

Electronic Addiction

With direct access to the brain, a wide variety of psychedelic effects can be produced without actually having to ingest chemicals. A character can never experience any physical damage because of withdrawal from an electronic drug addiction— psychological dependency, however, can be real.

The most dangerous form of electronic drug is direct stimulation of the pleasure center of the brain. This is commonly referred to as "wireheading." Wireheading is cheap, totally addictive, and may be legal or illegal depending on the campaign world.

Wireheading is much like any other form of implant. Electrodes in the brain, connected to a pleasure center, are hooked to a jack in the back of the skull. A small transformer, plugged into normal house wiring, provides the trickle of current necessary to stimulate the pleasure center. While a wirehead is hooked in, he becomes impervious to everything except the stimulation and will forego food, water, sex or anything else. To help circumvent this, transformers may be required by law to time out after 10 minutes and not reset for 12 hours. (This timer can only be defeated with the proper, sophisticated tools—a soldering iron, for instance.)

For graphic descriptions of wireheading, see Spider Robinson's short story, "God Is an Iron" (or its novelization, *Mindkiller*) and Larry Niven's novel *The Ringworld Engineers*.

Corporations

In a *corporocracy*, or corporate-dominated society, there is a sharp division between haves and have-nots, between those who belong to the corporate world and are protected within it, and those who are locked out in the cold and dark. To those on the outside, the corporations appear to be a heartless, oligarchic tyranny, crushing all in their path. To those on the inside, the corporation is seen as a protector which holds off the ravening horde outside the gates.

Some corporations may have generous intentions and will donate to worthy causes, but they have to stay in business and make a profit before they can indulge in such luxuries. As the world becomes tougher, the corporations adapt by becoming tougher themselves, out of necessity. This "we protect our own" attitude is sometimes called *techno-feudalism* Like feudalism, it is a reaction to a chaotic environment, a promise of service and loyalty from the workers in exchange for a promise of support and protection from the corporation. It is similar to the Japanese concept of "lifetime employment."

Prayerware

With computers pervading the households of the world, it is only natural that they will begin to be used in religious observances in day-to-day life.

Simple programs might do nothing more than sound the call to prayer five times a day for an Islamic family, or help a Mormon do genealogical research. By the mid-1980s, several versions of the Bible were available on computer disks.

But what about interactive software? A devout Catholic could say several hundred Hail Marys per second if plugged into a fast enough computer with the appropriate software. There would also be a great demand for behavior chips of a "proper" member of the church. And how much could you get for a braintape of someone who claimed to have spoken to an angel or a god?

Endangered Species

In a cyberpunk future, it may be assumed that many of today's endangered species are extinct, while many more creatures that are common today have become threatened. "Save the Whales" may be an obsolete slogan; "Save the Dolphins" or even "Save the Tuna" may be heard instead. As the protectors of endangered species lose battle after battle, they become ever more desperate and fanatic.

Groups like the "Wadical Wabbit Pwotectows" have been responsible for the destruction of automated farms, fishing platforms, and similar food-harvesting devices worldwide. Sportsmen, and even scientists and museum collectors, have been harassed or murdered by ambush.

We Don't Need No Steenkin' Standards!

One of the connectivity problems facing the networks of the 90s is interface standards. Right now, there is no universal method of data exchange — there are literally *dozens* of protocols in the networking community.

Most cyberpunk nets are based on the idea that, eventually, one standard will arise from the multitude and become accepted worldwide. The malicious (or perhaps just realistic) Game Master will not assume this to be the case. If networks are broken up by region (whether along international, corporate or local bounds), the GM could make each area's networks use a different communication protocol. This can evolve into several interesting game sessions as the frustrated netrunner discovers that, no matter how hard he tries, he just can't get any of the computers in Mexico to speak to his cyberdeck. Of course, he might have a few ideas about where to look for a ROM deck that will permit such communication... M

But what about interactive software? A devout Catholic could say several hundred Hail Marys per second if plugged into a fast enough computer.

M2: Yeah! That's something that's being discussed currently on the WELL's hacker board. Police departments who don't have enough funds to purchase more computer equipment are using confiscated gear. Is that a conflict of interest or what!?!
SJ: Well, if they're going to be pulling stunts like that they'd better learn more about computers and disk management. If they think that they can use someone's stuff and then simply hit *del* to get rid of their files—which they probably don't want seen out of their office—they're in for a surprise.
M2: An issue that dovetails with that is whether the government has the right to read the files on the computers they seize. And, if the data is encrypted, do they have the right to force the owner to de-encrypt it?
SJ: That's a very interesting question. I mean, the only reason I can imagine they'd confiscate the computers in the first place is in order to read the files. Is it required that you show them how to read them if they're encrypted? I don't know, but it seems like you could take the Fifth on the grounds that de-encrypting the files might incriminate you. You'd better have some damn good encryption though.

The problem is, having them devote so many man-hours to decoding your files is only going to prolong the ordeal. One of the reasons they gave for holding our stuff so long was that they didn't have the time to go through it all.
M2: I guess not, when they're confiscating things like printers, boom boxes and audio tapes. I love what Julian Dibbell said in his *Village Voice* article about the seizure of Acid Phreak's tapes: "the incriminating evidence fell into four basic categories: salsa, merengue, house and lambada."
SJ: Next thing you know, the Secret Service will say they need more funds to hire agents to go through the thousands of disks they've confiscated.
M2: What kind of help are you getting from the Electronic Frontier Foundation?
SJ: They're going to continue to press for the return of the rest of our stuff. Most of it was returned, but we're still missing some important things like a hard drive that was not backed up. And basically they're going to try to get some answers as to why the search and seizure happened in the first place.
M2: You were in DC for the press conference announcing EFF.
SJ: Yes. It was fascinating. We spent several days in DC meeting with EFF, Congresspeople and Computer Professionals for Social Responsibility. The press conference itself was pretty good. People asked intelligent questions.

THE END?
M2: How do you define hacker?
SJ: When I hear the word hacker, I still think of the old idea of the fanatical, dedicated, almost *monastic* computer programmer who sits up all night, eating Cheetos, drinking Coke and working on programs.
M2: (laughs) And an expanding waistline. What are your feelings about the hacking underground?
SJ: I'm sympathetic to some individuals and some aspects of the so-called underground. As in any underground, you have some people who are involved for wholesome reasons and others who aren't. Most of it seems pretty tame. But those kids who do break into systems better be darned sure they don't break anything.
M2: Do you think that the publicity will help you sell games? How are the GURPS Cyberpunk sales doing?
SJ: Cyberpunk sales are doing OK. The problem with the argument that the publicity will help us sell games is that we have such a small potential market to begin with. The gamers already knew about the game before any of this. I have no doubt that we have sold a *few* more, but I don't think it's a significant amount. The mass market that reads the mass media that we've been in aren't going to buy it anyway because they're not roleplaying gamers.
M2: What are your plans for the company's future?
SJ: If we don't come up with that $20,000, our company isn't going to have a future. So my first goal is to try and come up with that.
M2: Optimistically, what would you like to do?
SJ: Well, I'd like to continue to produce role-playing games, do some computer games, and I'd like to try some experimental games.
M2: What do you mean by "experimental?"
SJ: Exploring different approaches to roleplaying that haven't been tried yet. Lloyd and I have been working on a Bulletin Board System. We've been talking about it a lot, but we haven't written a line of code for it yet. I don't have any money to put into R&D. We're strapped. I'll tell you what I'd like. I'd like B. Dalton and Walden Books to carry *GURPS* . They keep saying that they're going to, but they never get around to it. Maybe if people started calling their local Walden or B. Dalton bookstores and clamored for it. That could definitely help us financially!



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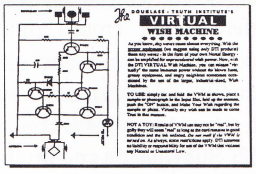
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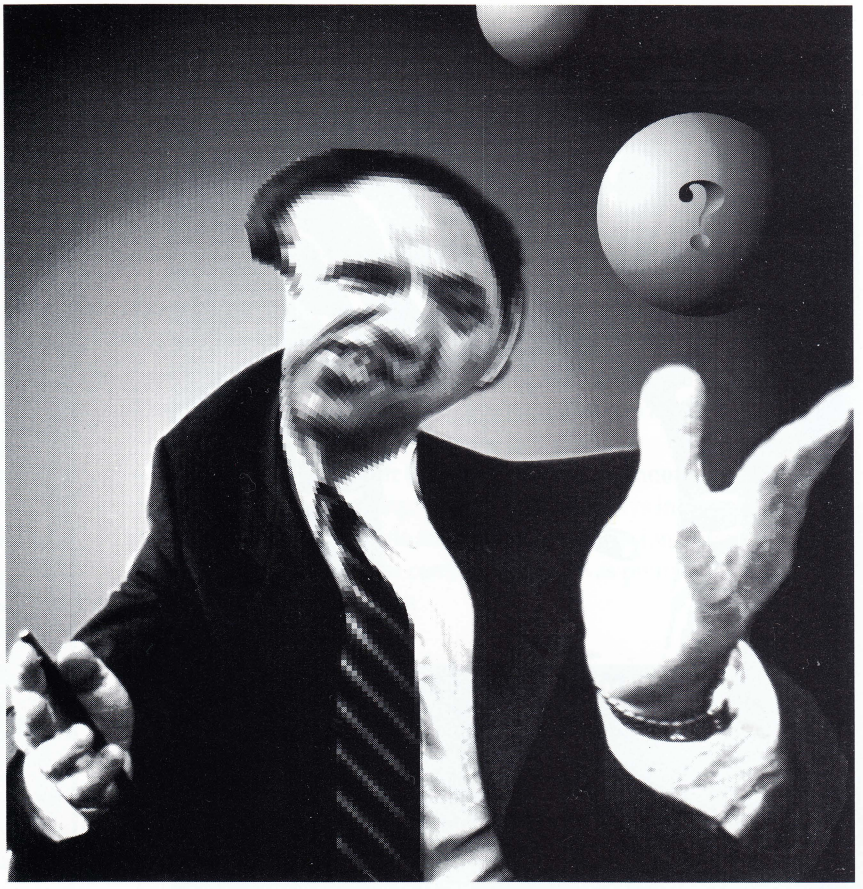
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Guess Work

An Interview with August Bequai

by Gareth Branwyn



August Bequai has been recognized (at least on his book jackets) as one of America's foremost authorities on computer security. He plays both sides of the legal fence, having taught at the Secret Service Academy and having represented hackers in court as a defense attorney. Author of over 200 articles and nine books; including Computer Crime *and* Techno-crimes: the Computerization of Crime and Terrorism, *he lectures internationally on computer and white-collar crime and holds several teaching positions.*

—Gareth Branwyn

Defining Hackers, Defining God

MONDO 2000: I'd like to talk to you about Operation Sun Devil and what's going on with that. Things seems to be happening fast.

AUGUST BEQUAI: You mean Operation Sun Devil itself?

M2: Yes, that and the response—the Electronic Frontier Foundation, the media coverage... I'm on one of the computer networks where there's a daily discussion on the implications.

AB: That's interesting, because when you look at it from the point of view of criminal law, it's not one of the more important cases in America today.

M2: It is for those people who are concerned about technological development and telecommunications! You've said that you've defended some hackers. How do you define "hacker" in your work?

AB: That's like asking "How do you define God?" Or, "How do you define good?" You know what I mean?

M2: No, not really. There are perfectly reasonable definitions of "hacker" being kicked around these days. The discussion seems to be centered on making clear distinctions between hackers and computer criminals. Hacker might simply refer to a computer enthusiast.

AB: Well, I would just call them white collar criminals. If an individual violates a criminal statute using a computer, as far as the courts are concerned, they're not going to call him a hacker, they're going to call him a defendant.

Taking on the Secret Service: Cheap, Easy and Fun?

M2: Members of the computer networking community are concerned about the misperception of their community, who comprises it, and what they use the networks for.

AB: Let me tell you this. I think they can all go home and sleep pretty safely tonight. From a criminal lawyer's point of view, the government doesn't have the resources to put all the techno-players in jail and I just don't see the government's efforts being at the scale that some of the literature and some of the individuals involved see it.

M2: But what do you think about the criticism that, with Operation Sun Devil, they've unconstitutionally confiscated equipment such as public bulletin boards? This sort of thing has struck fear in the hearts of many systems operators. The seizure of the Steve Jackson Games BBS is a case in point. They were, by the admission of the Secret Service, not the target of the investigation. And yet their BBS was confiscated.

AB: Then they have the option to go to court and challenge it. We have laws and a legal system, and they work!

M2: *If* you have the resources!

AB: You don't necessarily need a lot of resources. It doesn't take a heck of a lot of money to go to court and challenge some of these things.

M2: You're telling me it doesn't take a lot of time and money to challenge the US Secret Service!?

AB: *No sir,* it does *not*. If you hire a small firm, no.

M2: But wouldn't you want a big, powerful firm to represent you against the US government?

AB: Honest to God, I can't believe it! I've taught at the Secret Service

Academy... I don't know who the hell spoon-feeds you this kind of nonsense. Look, I've had a number of individuals that I've represented under investigation by the Secret Service and the FBI, and *they're* still walking the streets. I don't know who the heck has gone and blown the Secret Service up to this mythological shape and size. It's so silly.

M2: (bewildered) Well, you certainly have an interesting perspective on all this.

AB: Look, you guys have gone out there and you've taken an ant and turned him into Goliath!

M2: Wait... wait... wait. Who's "you guys?" I'm a journalist doing an interview.

AB: I meant the computer industry. I apologize. All I'm saying is, put this in the proper perspective. If you do a numbers game, you're going to find that the Secret Service is a small, criminal investigative agency that is involved in a lot of different areas. Computer communications is only a part of their game. It simply doesn't have the resources to go around doing all the things that it's been given credit for doing. And secondly, the Secret Service investigations, frankly, are not the best around. A pretty good lawyer can usually shoot holes through it.

He Calls it "Industrial Espionage!"

M2: You said in one of our earlier conversations that phone companies and corporations hire individuals to scan BBSs looking for criminal activity.

AB: Sure. They pay private investigators to scan boards. That's investigative work and it's perfectly legal. It's to identify a malevolent hacker *before* he strikes. *Any* force creates a counterforce. That's not bad. That's what makes democracy tick.

M2: Several people within Operation Sun Devil have said that the crackdown has been a positive deterrent.

AB: Of course. I think you're going to find that these cases were designed to scare individuals and make them think twice about engaging in criminal activities.

M2: But then, that same chilling effect has caused lawful BBS operators and users to be fearful and to take excessive security measures in fear that they will be swept up in the dragnet.

AB: Well, if you're obeying the law, the Secret Service isn't going to bother you.

M2: But you're refusing to look at the actual cases! The Jackson case, the Jolnet case... what about the Craig Neidorf/*Phrack* case!? He's being charged with wire fraud in connection with publishing the E911 documents in his electronic journal. What about constitutional issues regarding freedom of the press? *The Post* and *The Times* weren't prosecuted for publishing the Pentagon Papers. Is an electronic journal different from a hardcopy one?

AB: No, I would apply the same standards. But I wouldn't compare the material available on the bulletin boards with *The Times* or *The Post*. Some of the stuff leaves a lot to be desired.

M2: But it should enjoy the same free...

AB: You've got to realize that—and I tell this to a lot of the computer-types I talk to—the public couldn't really give a damn if somebody's computer is seized by the government.

I think this industry needs some techno-ethics. I've seen a lot of people who call themselves hackers, who are—for all practical purposes—criminals. They're not hackers. You know, the hacker thing is just a kind of a veil for them. If you're an industrial spy who breaks into a system and sells the information to a competitor... call it what you want... I call it industrial espionage. I mean, if he came to me, I'd defend him and I'd probably get him off. But that isn't the issue.

M2: But what you're describing isn't hacking. Industrial espionage is abhorrent to most hackers, too.

AB: Well, I don't care about the terms.

M2: But, if you're talking about the establishment of ethics, then you need to establish terminology that can differentiate types of activity, don't you?

AB: Look, hackers need to accept the fact that they operate in a larger society and they're a minority. They need to learn to balance their needs with the needs of society in general. I'd like to run red lights occasionally, but I can't do it 'cause the law says I can't. How would you like it if I got into *your* medical files?

M2: People keep talking about medical files! Is this a big problem that we're not aware of!?

AB: I've come across cases of people getting into other people's medical or financial files for purposes of blackmail. If you want to have access to someone's financial files, it can be done. Absolutely.

He'd Rather Walk

M2: What sort of groups do you lecture to?

AB: Computer professionals, security professionals, executive-types, management-types, supervisors, lawyers, government officials.

M2: In a recent speech, you stated that "Millions of Americans find themselves the victims of computer crimes" and "The public is called upon to pick up the tab for billions of dollars in annual losses... at the hands of computer criminals, hackers, and pranksters." What did you mean by those statements?

AB: I meant that if some half-wit breaks into a government computer and destroys files, the taxpayer has to pay for it. If Uncle Sam pays for it, I pay for it. Think about it.

M2: But where did you get those figures!?

AB: Oh, that's just guesswork. White collar crime runs in excess of a hundred billion dollars. My sympathy goes to the public. I'm not so interested in technophiles who think they have an inherent right to do whatever they feel. I'm concerned for the average Joe Blow American.

M2: Do you think that the media has exaggerated the threat of computer...

AB: I'll tell you what *I* think. I think the media has exaggerated the threat of law enforcement running around and locking people up. And I think the media tends to glamorize hackers. Some of the hackers I've met, I wouldn't even have over for coffee, let alone glamorize. I don't think we would miss hackers very much if they weren't around.

M2: What!? Of course we'd miss hackers! We wouldn't have personal computers without them! We'd probably both be out of jobs!

By the way, are you on any computer networks? Do you ever telecommunicate?

AB: Nah, I've never gotten into computer networks. I'm old-fashioned (laughs).

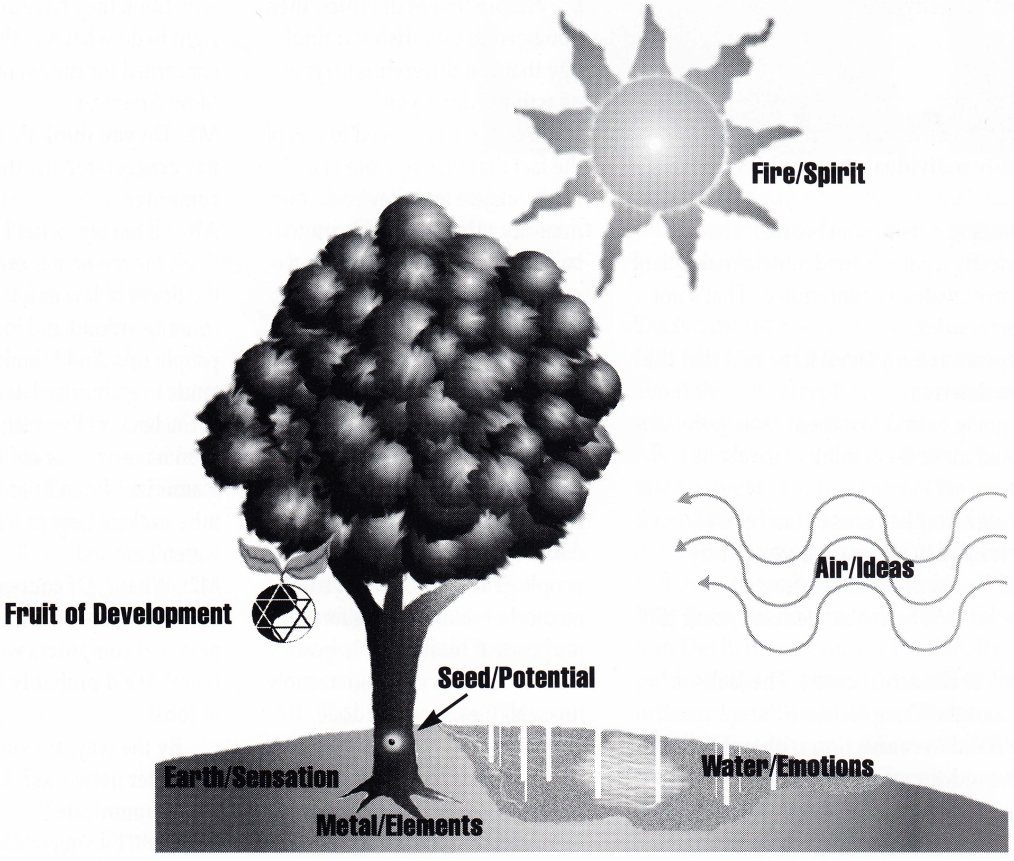
M2: Do you even *use* a computer?

AB: Yes, we have computers in our office. But I often write my books by hand. I'm a believer in labor. I believe in automation, but on occasion, I'd "rather walk," as they say. You know what I mean? M

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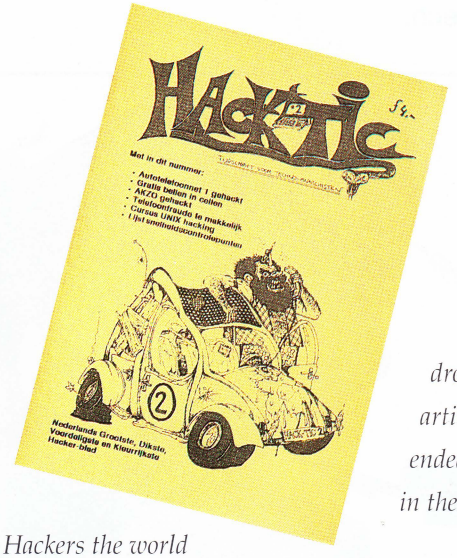
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Phreaks "R" Us

An Interview with Hacker Publishers Emmanual Goldstein of 2600 & Rop Gonggrijp of Hack-Tic

by R. U. Sirius & George Gleason





The Emmanual Goldstein of Orwell's 1984 *was a legendary author whose forbidden book fuelled the fires of hidden discontent among the thought-criminals of Oceania. The actual real life Goldstein could pass for a University student. With curly hair, printed T-shirt and a look of purposeful concentration, his accent barely hints at his New York origins. He is the editor of* 2600, *the North American hacker's journal.*

Rop Gonggrijp is Goldstein's European counterpart. He is the soft-spoken spokesperson for Hack-Tic, *the Dutch hacker's journal whose subtitle contains a word sure to provoke consternation in the hearts of control freaks around the world: "techno-anarchists."*

Together they made the trek up the offices of MONDO 2000. *With them was a certain "Bill," whose mastery of hardware engineering and other subjects has made him a legend among hackers and phone phreaks on the West Coast. R.U. Sirius rolled the tape and performed a friendly interrogation. I stopped by to drop off another article, and ended by joining in the fun.*

Hackers the world over have begun to see themselves as something of a movement. On one level hacking is about exploring the depths and limits of communications and computing technology; on another it's about electronic freedom of speech and unfettered play.

Telecommunications experts of all political stripes are concerned about the lack of coherence in the design of local and global telecommunications. Short-sighted decisions are becoming the rule, with bureaucracy winning out over sound engineering principles. The role of hackers in these issues can be likened to that of ecologists in energy policy; they call for informed public participation and decisions that will be sustainable and fair. Their uncompromising feistiness is important. They show just how fossil and monolithic the old systems are in the face of the new realities of the decentralized global nervous system.

George Gleason.

HACKERS QUESTION EVERYTHING

EMMANUAL GOLDSTEIN: A hacker is someone who asks lots of questions and doesn't believe in following the rules all the time. If somebody says, "Don't look into that anymore, don't ask me any more questions about that," they won't accept that and they'll do it anyway.

MONDO 2000: What about finding answers?

EG: A good hacker will look everywhere to find answers. . . ask all kinds of people, play with all kinds of machines, try it himself. A hacker defines his own terms.

M2: Do you think there's any revolutionary intent?

EG: Well, you see, you say revolutionary intent these days and it's kind of a turn-off, unfortunately. And anyway I think it's a lot more subtle than that. I think there is some revolutionary intent. Yeah, it's there. It's inside people. But they don't want to say it.

M2: Rop, would you say that the European hacker community is more overtly political?

ROP GONGGRIJP: I tell you there's no such thing as a European hacker community! There's probably more of a difference between Dutch hackers, German hackers, the few British hackers I know, and French hackers—where they won't even call themselves hackers because the French government is so sharp on these things. Every European country has its own mentality.

The German hacker groups I know, like the Chaos Computer Club, are *very* political—concerned about freedom of information, access to information, rules, DDR modernization of the phone system and of the government itself. The Dutch hackers have more in common with most of the American East Coast hackers, I think. It's basically a very playful group that is exploring, finding things out, building things, doing crazy things with technology.

While you can use your hacking abilities to further criminal goals, that doesn't make the criminal acts themselves hacking, and that's unfortunately what the media has mixed up. So it's a great hack to be able to figure out a way to work things so that nobody gets charged for phone calls. I think that's clever. But to simply charge some poor couple in Idaho $1,000 for your phone calls, there's nothing great or particularly clever about that.

M2: What's your feeling about the ATM hack?

EG: I think there's people out there doing it right now. I think if you make the card and you can figure out how to do it, more power to you. You've created something and used your mind. But if you buy the card from somebody and if you just used the card to get money, if you're not figuring anything out, you're just committing a crime. There's no hacking involved. And of course, you don't get that crazy burst of energy from figuring something out... "Ah-hah! *Now* I've got it!" That's what hacking's about! That's very healthy.

Now we're being told that it's wrong to be curious, it's wrong to ask questions. Why do you want to know that? The only reason you'd want to know that is if you wanted to commit a crime. And what does that do to young people today? It makes them very scared, timid. There was a kid who went to our meeting in Los Angeles who was kicked off a Bulletin Board for asking questions about Captain Crunch.

RG: One thing about the ATM hack... the only thing we printed [*Hack-Tik* printed the controversial diagrams that were left out of "ATMs and the Rise of the Hacker Leisure Class" in issue #1 of *MONDO*] was a diagram that shows: what a magnetic stripe is, where the tracks are, where it's PIN [Personal Identification Number] is; and how you read it, how you write to them, and how you copy them. We never told anybody how to figure out PINS. Anybody can figure that out from information in almost any public library. We think people have a right to know what is on those magnetic stripes. We think people have a right to know how things work.

EG: I wouldn't stop there. I'd tell people how you figure out PINS. I'd like to tell that to people. That's a hack. It's a crime when you go out to use the information against somebody.

M2: My analysis is that what we think of as money and value right now is just electronic information and that it can reasonably be manipulated in any way anybody wants to. And right now the people in control manipulate the hell out of it. They're always creating money and there's really no bottom line in value, so finance itself is really basically just a digital battle or game.

EG: I'll tell you this: the more digital the society gets, the more we'll be able to completely change money. We'll be able to change a date on a document. We'll be able to add a figure to a bank balance. We'll be able to change a "no" to a "yes" at some point. How do you trace things like that? If you're a good programmer, there are no fingerprints. At the same time, we're telling people to be careful and be aware. Understand that the facts can be changed and this is how they can be changed. And

That's all we've been talking about since we got here, so you can imagine how much trouble we're in now!

The more digital the society gets, the more we'll be able to completely change money. We'll be able to change a date on a document. We'll be able to add a figure to a bank balance

if we don't tell people, they can be changed anyway.
RG.: There's this panic about hackers being able to access something like TRW... credit records. Everybody that subscribes to TRW can get your credit record. Everybody! *Every* employee at any company that wants to sell you things, people that want to sell you loans, they can *all* get your credit records. A few hackers got access to that information, and the whole nation's upset.
EG: What Rop is saying is true, but I'd say that the media *tries* to get the whole nation upset. But a lot of people are more sophisticated than we give them credit for. I've talked to people of all types who are a lot more outraged that these records are being kept and passed around in the first place.

TELECOMMUNICATIONS

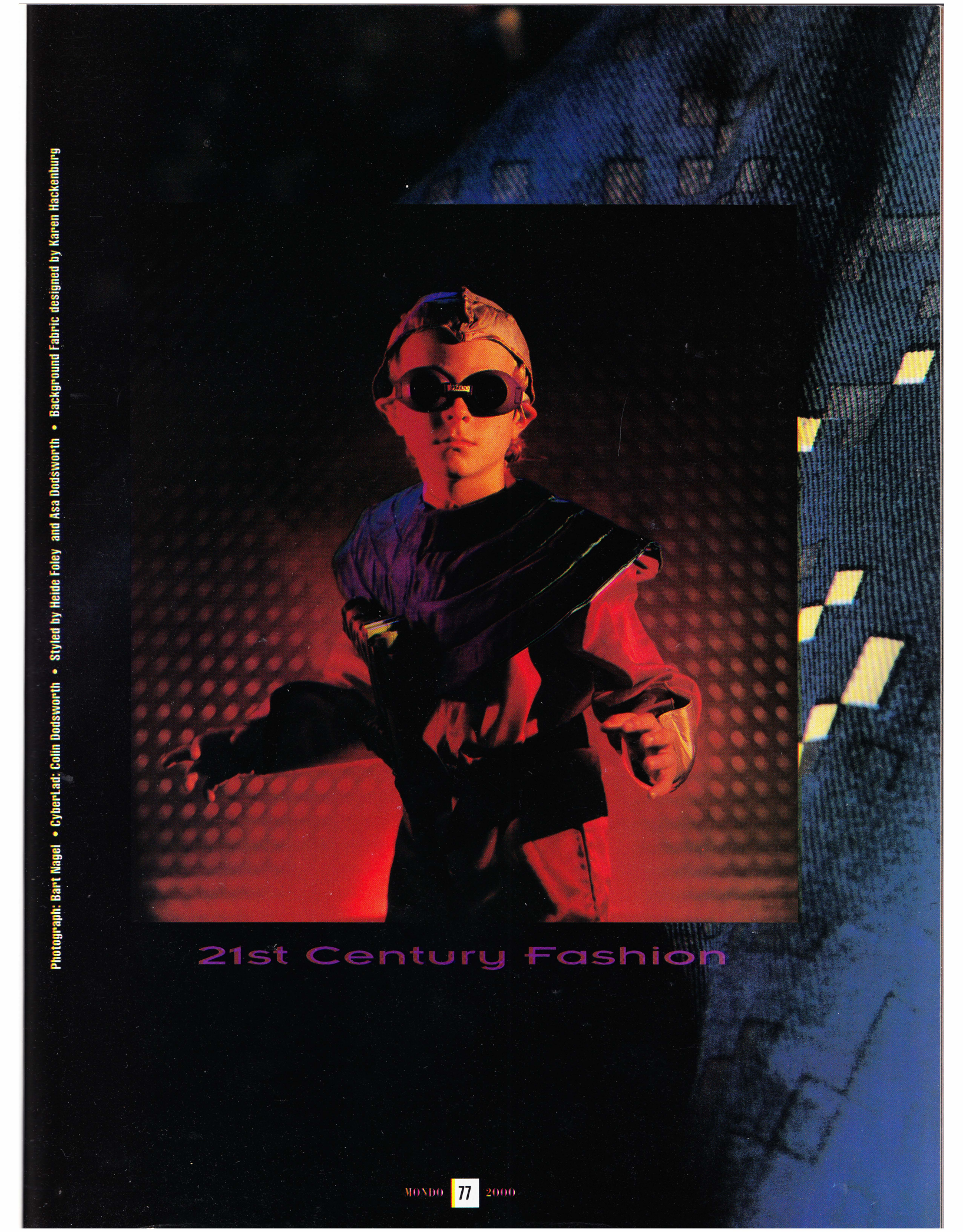
RG: If I tell you about a simple device that works in thus and such manner and allows you to do toll fraud on the phone system here, it's illegal for me to tell you that in California... also, in Germany.
EG: That's all we've been talking about since we got here, so you can imagine how much trouble we're in now!
M2: The cost of covering actual territory by telecommunications is now really minimal. The phone companies want us to keep thinking in terms of territorial, rather than informational landscapes...
RG: You want to know what the rates for calling from Iraq to here are? I understand it's a lot lower than the reverse.

It's important that ordinary people overcome their fear of technology and grasp control—do what the hackers do. If everybody had the knowledge that the hackers do, you wouldn't see such rip-offs.
GEORGE GLEASON: You know, the phone company doesn't do their own tech anymore. If something's wrong, they send for the manufacturer to come and fix it. The phone company engineers feel very bad about this because their work degraded from designing systems and doing telecommunications engineering to just screwing the wires on. It also means that there's really nobody with a global overview of what's going to happen, what the design philosophy is going to be. They just install what they think is profitable at the moment. They buy the cheapest switch possible. But even the phone company doesn't have an idea of what telecommunications should be for society.

Now imagine the equivalent of an AT&T crash happening in a situation like that where nobody in charge really knows how the whole thing works. That's frightening.
M2: How would you build it back up again?
RG: Take two tin cans and a piece of nylon wire and communicate. You can put all of the instructions on the back of a postcard.
M2: Can you draw a diagram of that?
RG: Sure. [laughs]

DARKSIDE HACKING?

M2: Talk about the Galactic Hacker Party. What's that all about?
RG: Well, first of all, it wasn't a large meeting of terrorists planning the downfall of planet Earth. It was very much about issues— political issues and technical discussions. We understand that it was described by some U.S. hackers as a meeting of darkside hackers.
M2: What's that supposed to mean?
EG: Anything the computer industry doesn't like!
RG: The Zero Positive Ball in Amsterdam was a 69-hour-long happening linked with the San Francisco AIDS convention. While it wasn't officially a Galactic Hacker Party event, it was organized by a group of people closely associated with the Galactic Hacker Party. What happened was a whole team of hackers created a worldwide network. There were computer terminals in bookstores in Amsterdam, there was an alternative bookstore, a somewhat more mainstream bookstore, a gay and lesbian bookstore, and the main center itself had 10 terminals. There was this happening going on and people would come in and use that network. It was made simple, so people walked off the streets who'd never touched a computer before in their life and were hooked to the network. People started talking about getting a computer system themselves, buying a modem, coming to the University library to use their terminals. It was getting people into computers. That's what hackers do if you leave them alone. They evolve into people who are involved in building networks, building systems. Exploring is only phase one. Creating is phase two. If you stop people from exploring, if you point guns at them and kick their computers in the back of your car and drive away with it and tell them to never do a thing like that again, they're not gonna create either.
EG: But they *will* remember. M



Photograph: Bart Nagel • CyberLad: Colin Dodsworth • Styled by Heide Foley and Asa Dodsworth • Background Fabric designed by Karen Hackenburg

21st Century Fashion

Deborah

21ST CENTURY GIRL

Here comes the 21st Century
It's gonna be different for a girl like me.
from "I want that Man"
Deborah Harry, 1990

Deborah Harry is *21st Century Fashion. Getting her to talk about it though is another question, or series of questions. Here then, in the minimalist style of her old pal Andy...*
R. U. Sirius

Interviewed by
Tresca Behling,
R. U. Sirius
and
St. Jude

MONDO 2000: What will you be wearing on New Year's Eve at the turn of the century?

DEBORAH HARRY: That's an important night so it'll have to be something really sensational... maybe nothing.

M2: If at some point in the 21st Century it becomes possible to change the way you look in any way imaginable, what do you think you would do about that?

DH: I don't think I would change anything... When I was younger I would have changed everything every day... Hmmm... A tail might be sexy.

M2: Do you think things like surgery and piercing will become mainstream?

DH: I think it already *is* mainstream.

M2: You once said that you wish that you'd copyrighted sex. Is there anything you would like to copyright now for the 21st Century?

DH: Well if I told you what it was *you'd* do it..

M2: Do you have any general ideas about the future? In a lot of your songs you say, "I've got a plan."

DH: (laughing) I used to make lists. I don't do that anymore. I'd lose them or never complete them.

...Well, Mick Fleetwood has some fabric that makes sound in response to body heat or something *(ed. covered next issue)*. That sounds pretty cool. I don't really think about fashion or the future or *anything* anymore. I just try to live. But I guess we'll all dress like we're Chinese and we'll all look the same.

M2: If, in the 21st Century, you got a tail, what would you want Chris to get?

DH: Hooves.

M2: Why should or shouldn't you get the role of Molly in the film version of William Gibson's *Neuromancer*?

DH: I don't really have an answer for that because the way decisions are made on those things is so bizarre. But from my point of view, *of course* I should be Molly. My name *is* Debbie.

M2: You have the opportunity to star in another Kronenberg film but he wants you to have reversible plastic surgery on your internal organs. Would you rather:
A) Have your stomach turned into a pollution-belching urban landsape?
B) Have the collective information of all Haitian voodoo chiefs pass through your subconscious all at once via a tiny microprocessor in the right brain?
C) Have your cervix turned into a mongoose?
D) Shoot R. U. Sirius for asking these questions?
E) Act in Lassie Does Detox instead?
F) Other?

DH: B & D

M2: What would you wear to a Bar Mitzvah on Mars?

DH: Textured spray paint.

M2: If you could wear the greatest acid trip you've ever had, what would it look like?

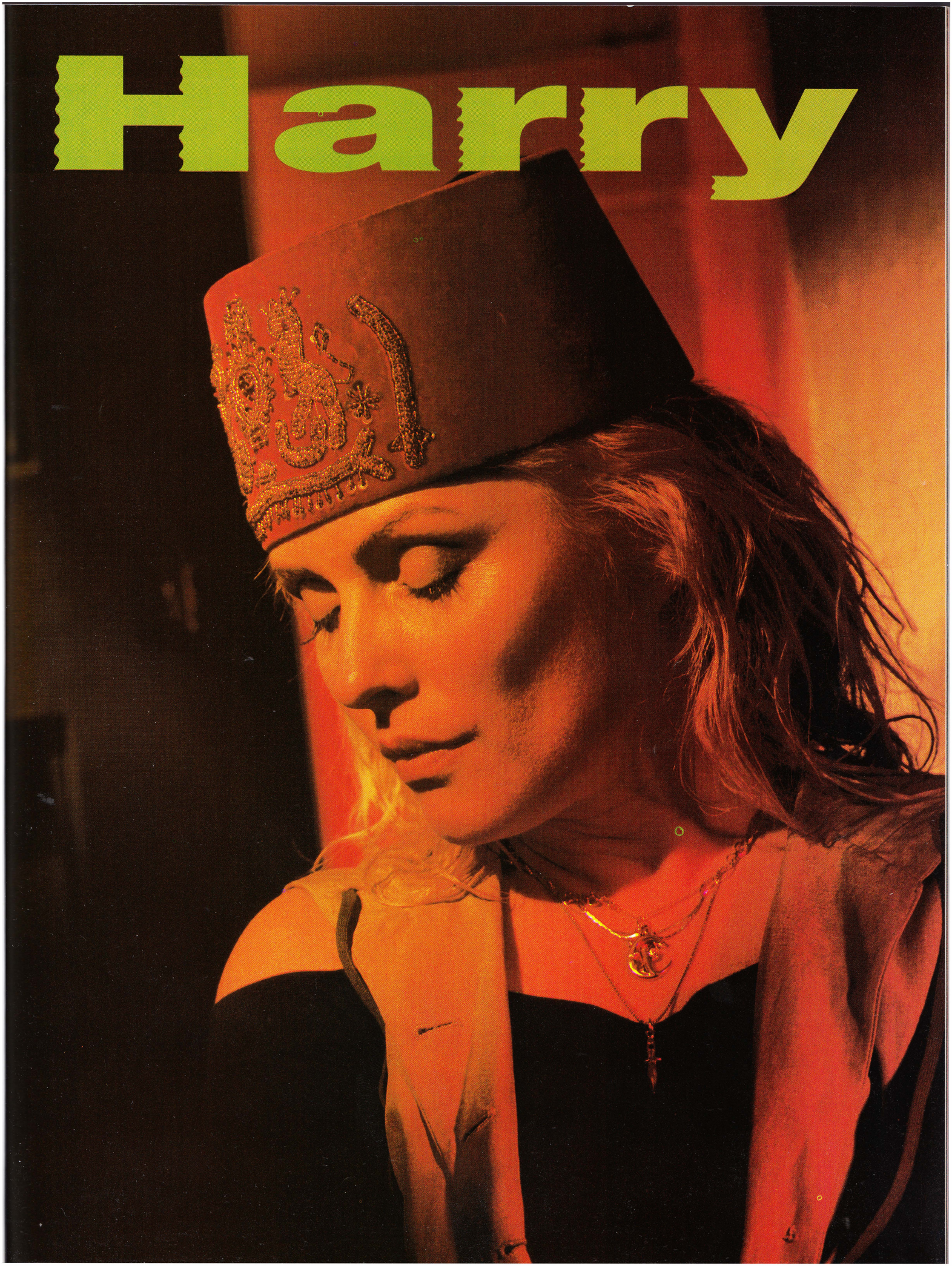
DH: Textured spray paint.

M2: It's 2025. You walk into the bar and it's full of exact Deborah Harry replicas. What would you do?

DH: I would sit down and order a very dry vodka Gibson straight up. M

Photograph by Bart Nagel

Harry



dangerous attire



Photographs by Joshua Ets-Hokin

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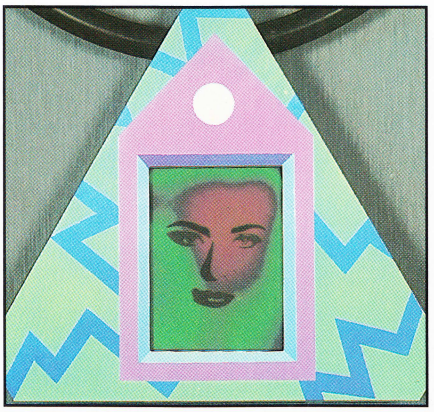

AGAPE!
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CYBERNETIC JEWELRY - WEARABLE MICROSYSTEMS

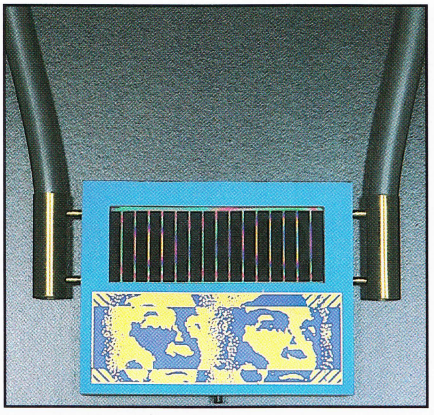
FROM HARDWARE IN 3-SPACE TO SOFTWARE-IN-TIME

by Vernon Reed

Jewelry and ornamentation have deep roots in the human psyche. Jewelry, particularly fine art jewelry, can be seen as a physical extension of the wearer's personality. It's a coding system of great power by virtue of being so closely associated—literally in touch—with human energy. And, for those who knew how to manipulate that energy, jewelry and body ornaments were props for shamanizing to the upper and lower worlds.



Jewelry is an identifier. So are tattooing and scarification, labrets and Mayan earspool assemblies. The urge to express personality and codify social structures is universal. People have always done it with whatever materials they had at hand. The stuff I'm making now functions as identifier mainly by showing the world that the wearer feels strongly enough about information age art to spend a lot of bucks to acquire and wear examples of same.



I would like this stuff, or some of it, to eventually be linked up with brain waves, muscle signals, etc. You know—the old cyborg thing, but as *art*. There is some user/wearer programmability built in—the wearer can go to different subroutines in the software that produce strikingly different patterns in the LCD, and this can be keyed to mood or whatever. I did one long ago that responded to skin resistivity on a rather crude level, but it was pretty interesting. MOOD WIGS!!!



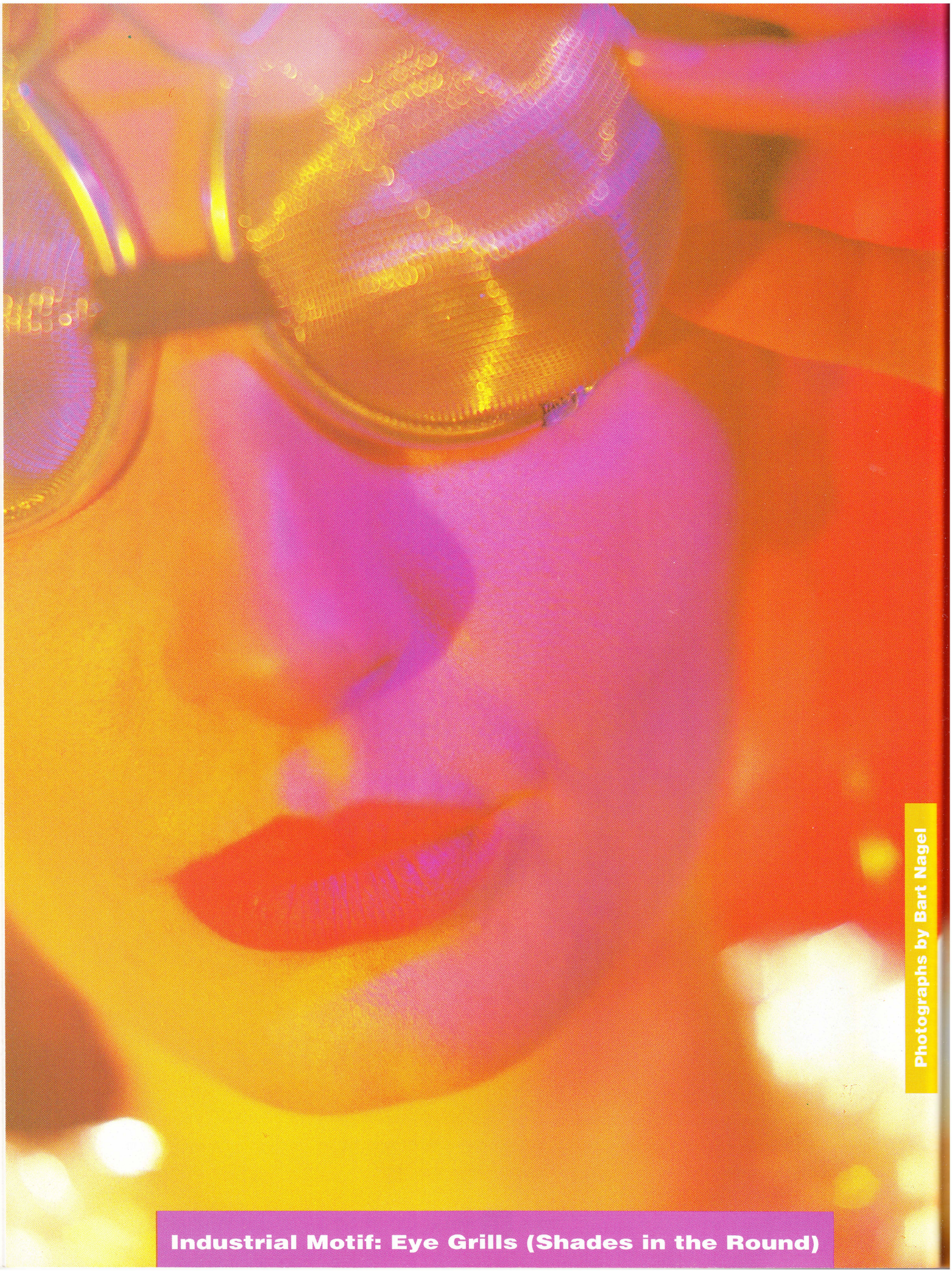
The work I'm doing now aims to amplify the individual psyche through technological means. I can create personal cybernetic adornments that are both wearable and capable of interacting in complex ways with environmental stimuli. When people actually go into cyberspace, these coding devices and identity vectors will serve to maintain an intense sense of human presence while at the same time helping to link into data structures in that multidimensional matrix.

In cyberspace, there are data structures which represent all kinds of things, including human actors. I propose placing other data structures on those actors as "identity vectors" to help all those cyberspace people recognize each other in the matrix.

Rather than LEDs, I use direct-drive, twisted-nematic LCDs that I design and fabricate in my studio. The spatial and temporal configurations of these LCDs are controlled by programs stored in on-chip EPROM of Motorola single-chip micros. I've been working with 16-segment LCDs (arranged as pie segments, bars, whatever) because it's easy to control with two 1-byte I/O ports. The programs are written in a proprietary language that I commissioned so I wouldn't necessarily have to learn assembler. The graphics are generated in real time, and the tiny (2k) memory allows about 3 minutes of novel imagery. Beyond three minutes you get too much repetition. Movement and change are *everything* in this new jewelry paradigm.

I came into this field as a jewelry artist rather than as a computer type, so I'm relatively naive technically. Eventually, I'd like to work with people who are into such things as transistor-driven LCD video, non-invasive nerve signal receptors—any capability that will push the envelope on this new, very personal, cybernetic art form. It's so new that even I don't know what the hell I've created or where it can go.

There are two aesthetic "edges" to a jewelry object, whatever the medium. One edge conveys the concepts and intentions of the maker and the other edge conveys those of the wearer. In almost all jewelry, mine included, the first edge far outweighs the second, and that is what I meant by the identifier function of the work I'm currently producing. When true bio-responsive capabilities come on-line in my jewels, that balance is going to shift dramatically. Then, finally, we'll have jewelry for shamanizing in cyberspace! M



Photographs by Bart Nagel

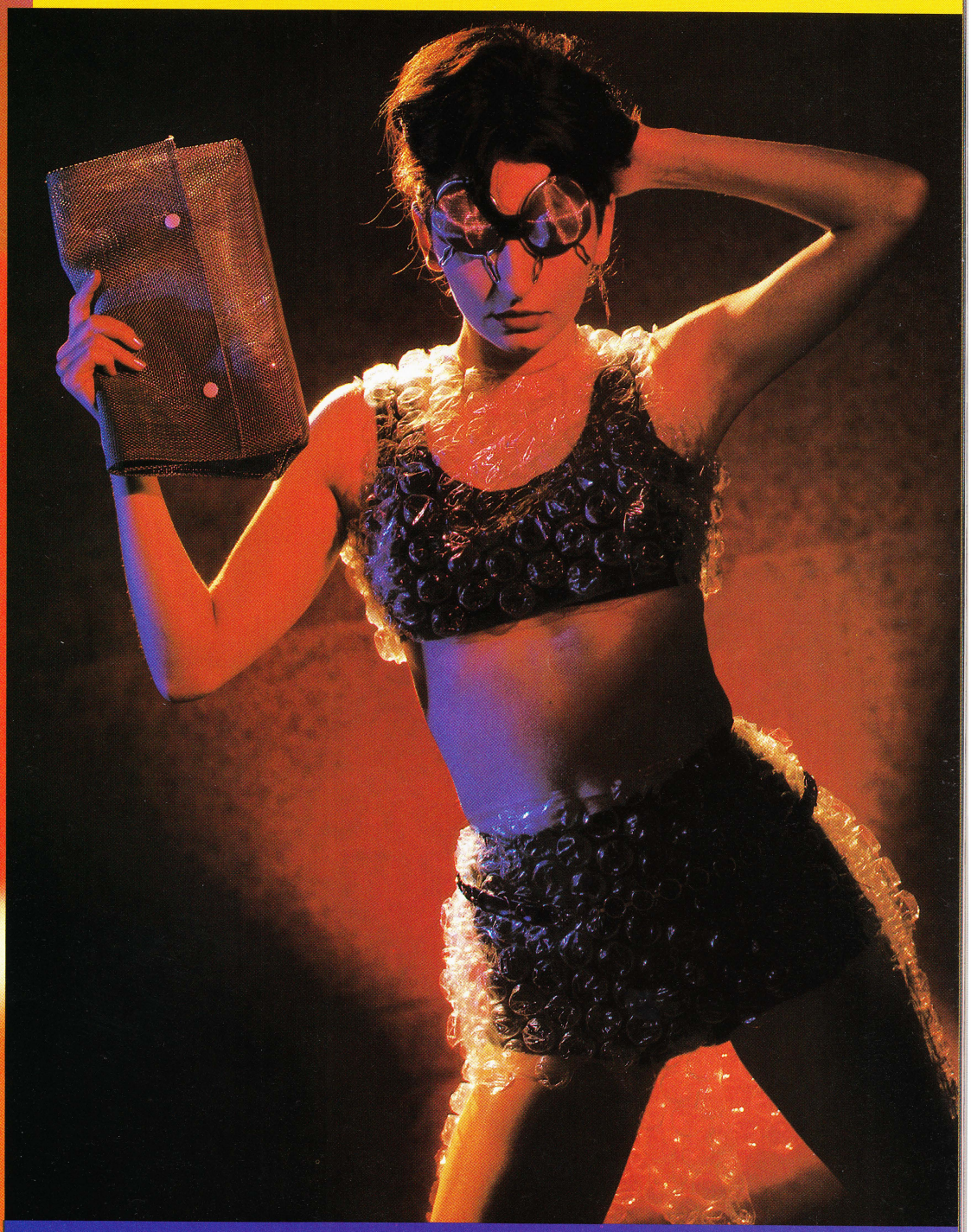
Industrial Motif: Eye Grills (Shades in the Round)

Boom or Bust

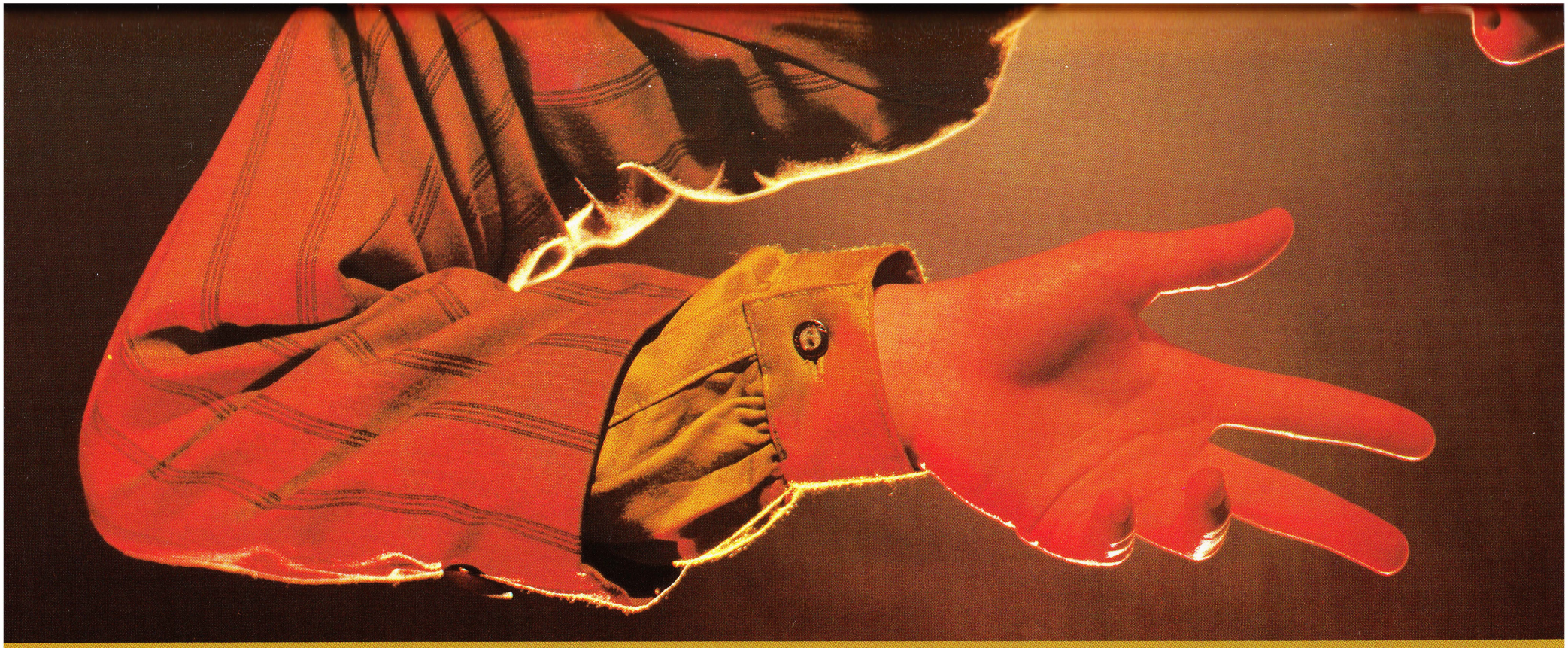
by Justine H

Mondo Predicts Fashion Function for a Go-Go Economy

Beaux Mondoids *of the future will sport a form that follows function. Spandex and synthetic fibers have replaced the tail-fin darts of the 50's. The Japanese have traded their kimonos for sci-fi samurai looks. Formfit designs create a uniform ready for action, not Barcaloungeburn. Tight means a future that's ready to BOOM. What if fat* is *an issue? Don't sweat it. Fat is the wave of the future, the new radicalism, as evidenced by the cutting-edge group TAD and numerous Mondochic guitarists. The punks get fatter, the land belches and the people—the people will soon come round to gear that shows they're shaped.* M



Other Fashion Functions: Fashion Re-cycles (Bubble Wrap Dress)



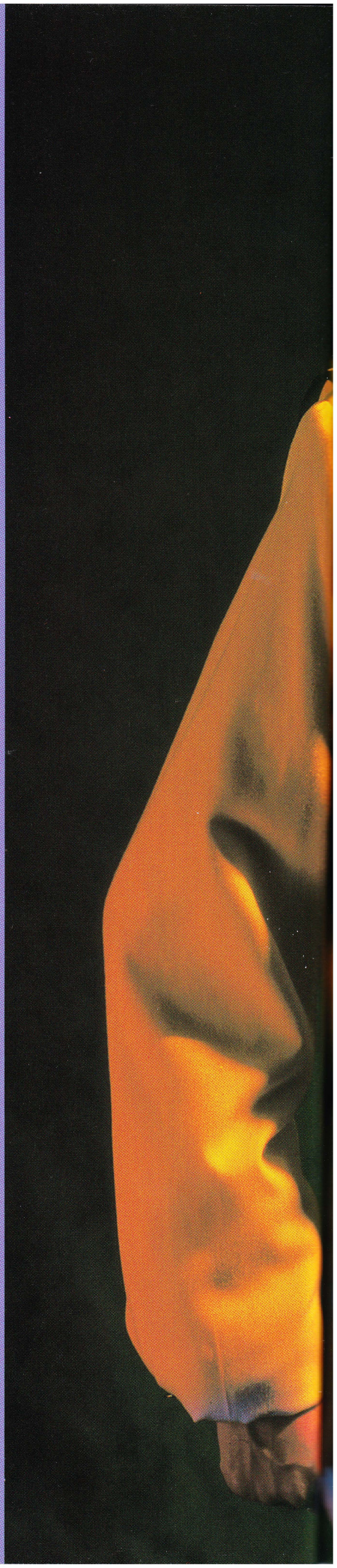
Stafford; photographed by Bart Nagel

JEFF DESIGNS

Jeff Designs knows how to dress a man beautifully without accessories

Stafford

loved this Jeff Designs suit at first glance. Was ecstatic to be modeling it. Wouldn't take it off. Wants it. Wants it real bad. Stafford usually gets what she wants.



Photograph by Bart Nagel





In the 21st Century, hats will still be worn on the head. With mutations likely and second head implants desirable, the opportunity for displaying the many facets of your personality will be accomplished simultaneously; split personalities will no longer have to share the same head. What does that have to do with these photos? Not much.

—Bart Nagel

Hats designed by Pine

Modeled by

Katherine Harris

and

Avenne McBride

Photographed by

Shelly Schroeder



WHAT COMPUTERS CAN DO FOR THE FASHION DESIGNER

Willard Van De Bogart

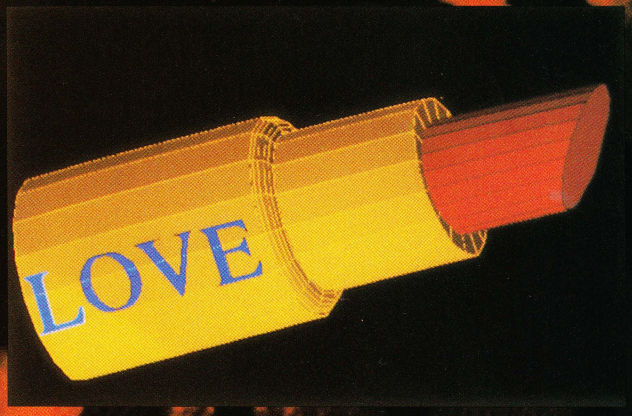


Illustration by Willard Van De Bogart

Right now...

Give the program ten local body measurements; it will print out a master pattern for a blouse/ top/shirt, pants or skirt. The master garments can be elaborated into a custom-designed, custom-fit wardrobe. *The designer is the only human in the entire process...*

Convert a graphic to knitting weave structure... and send the resulting specs online to industrial weaving machines.

Design a line of garments; oversee project management *and* direct automated cutting and assembly, online, under one integrated system.

Apply a fabric to a form; see the drape or cling, the texture, highlights and shadows on a live, though admittedly virtual, model.

Drop a handful of leaves on the true-color, variable-res scanner. Tune the colors to realer-than-real, or make them all variable saturations of magenta or Pantone 5000. Select only a corner of a leaf and repeat the image for a fabric print.

Digitize it, scan it in or draw it; once it's in the machine you can alter it infinitely, superimpose images, blow it up, pinch it down, play God in your very own universe.

Translate a sketch into a pattern by comparing it with images in a library of silhouettes, a library of fabrics, a fashion-history library; images are associated with their block patterns.

Search the library databases; you are prompted for the name of a style or a two-word description: "fabric rayon" or "year 1987" gives you catalogs of images to play with...

Exploit new materials. "Singing" fabrics. Or the new aerogel spun fibers CAD-woven using orb web algorithms.

Create a perfume bottle or a bracelet realistic enough for buyers to base decisions on... three-dimensional images complete with reflections, refractions, shadows and highlights...

Background fabrics Designed by Karen Hackenburg



Illustration by Howard Rives

Later... but soon...

A traveling designer and a local buyer create private-label clothing designs on the spot; a telelink with the production facility allows quick delivery of sample garments.

Much later...

You're leaving to spend several days on Luna, so you dial up something to wear...

Call up your current 3-D body image. Rotate the model and consider: you're female right now, and you've added a little flesh... That's okay: when you change the image to 1/6 gravity it looks almost worshipable.

What about antique goddess? No nudity: you want to look rock-solid conservative for the business meeting.

Winged Victory? Pull up the spec and copy her dress to your image, adjust the length... there! It needs work. Make the shoulder panels nearly weightless, more supple; yes, now they float like wings...

The cloth over the buttocks needs more weight to drape properly... there... and make the sides float.

Change the apparent fabric to linen gauze, very art-historical; make it very-low-density-greyed white, turn up the bioluminescence. Oh, no—they're bioluminescing everything this month. Let's try faintly opalescent, pearly—ugh, that looks bogus: totally neo. Dial up the Victory again and copy the surface light: there, you've got the exact color effect of the old marble...

That looks just right. You can do your skin to match.

Dial it up now, why not? before lunch.

For a technical review of available software and info on designers currently using it, write to:

Willard Van De Bogart,
MCI E-Mail 429-6900
or FASHIONNET



Fashion Goes CAD

Fashion today is being designed on the computer. According to a study by Gwendolyn J. Sheldon for the summer '88 *Clothing and Textiles Journal:* "The employed designers predict that designers entering the industry in five years will need an understanding of the capability of all computerized apparel equipment and hands-on experience with design/ illustration and patternmaking equipment as well as grading, costing, and color-matching equipment."

The more computers impact the apparel industry, the more important it will be for a designer to create new fashion lines on the computer. In a total management information system (MIS), the design workstation is placed as the front-end driving mechanism for responding to consumer demands. According to Professor Allen Hunter of North Carolina State University, "the future applications of CAD may be a 'traveling designer' who interactively designs a private label line of clothing for the buyer. These styles would then be transmitted to the production facility for quick production and delivery of the sample garments."

— WVB

Background fabrics Designed by Karen Hackenburg

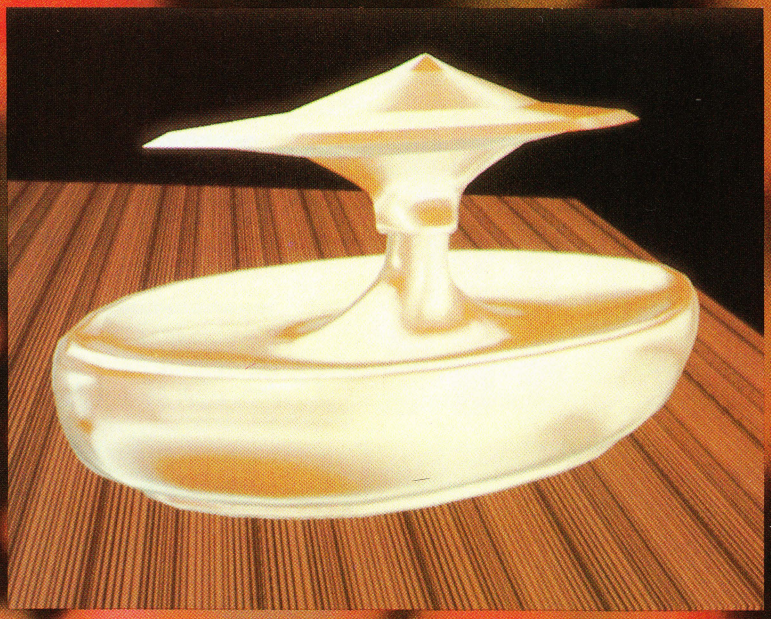


Illustration by Willard Van De Bogart

JEWELRY GOES CAD

CAD systems are now available that create the shape of the gem stone, the shank of rings, and even the engraving techniques in precious metals. There are several major CAD packages available for the jewelry designer. The best among these are *CAD Jewel*, available through Gemological Research Corp in San Mateo, CA., and *Gem CAD*, from Vance Info Systems of San Francisco.

Generic 3D Drafting is a software package used by The Terzian International Group that provides a library of over 100 stone cuts and 80 mountings as well as some chain designs. Michael Golding of Michael & Mark of Seattle, Wash., modified the Generic CADD package from Generic Software Inc., turning rough sketches of gemstones and settings into precise visual images. Golding mixes and matches diamond cuts, ring shanks, and many other jewelry alternatives.

Joan Michlin, a fine art jeweler from New York City, has recently released an entire line of jewelry inspired from a 3D CAD package. At the Gemological Institute of America in Santa Monica, plans are currently underway to create home study courses utilizing CAD sketching packages that will allow student designs to be sent over modem for evaluation.

GIA is preparing for the big revolution in data when there will be a universal digital format that can be stored and manipulated by the designer. At a recent convention, I was pleasantly shocked to hear the hypertext concept mentioned several times over. With this hypertext capacity, a new interfacing of words, sounds, and visuals will be used collectively by the designer to model and visualize 21st century design trends.

—WVB

Covert Design & Holographic Clothing:

A LOOK AT 21ST CENTURY FASHION

by Mark Heley

The "Articulator of the New"

Fashion is in crisis and it doesn't even know it yet. While the march of integrated technology has infiltrated every other media, the fashion industry has remained largely aloof, disdainful of the cybernetic prevolution's electronic barrage. The "articulator of the new" seems to want no part of the virtual future.

One needn't be surprised. Fashion is, after all, an archetype of 20th Century media invention. As a pseudo-craft with firm roots in the mass manufacturing processes of industrial culture, it has made itself structurally resistant to technological innovation. And as a major polluter and frivolous squanderer of energy resources, it is growing ever-distant from the groundswell of contemporary thought. *Haute couture* is as insulated from the world of global warming and supercomputers as the court of Louis XVI was from the French *sans culottes*. The battle has already moved on. Global-scale technologies like jeans and T-shirts have been instrumental in creating a style hegemony that stretches from Nova Scotia to Papua, New Guinea—dispensing mass androgyny on a scale heretofore unseen— and short-circuiting the fashion hierarchy *en masse*. Anthropologists searching out remote Indian tribes can be sure of one thing: Adidas and Levis will have gotten there first.

20th Century Industrial Fashion

Twentieth Century fashion, as we know it, really started with the revolutionary 1947 collection of Christian Dior. In one fell swoop, he elevated the Paris catwalk into the West's pre-eminent fashion marketplace by introducing one radically new concept: while slowly changing trends had been the rules in the world that preceded him, Dior offered totally new styles, cuts, and textiles *every season*. Dior's message was one of personal transformation through constant change. His collections relocated the wearer's identity into an ever-shifting hardware flux that satisfied an austere post-war world's need for glamour and excitement.

Now, however, the revolution itself has become a linear event. A yearly resource-burning orgy whose only law is change for change's sake. What started out as genuine innovation has ended in a static holding pattern flashing through repeated programs like a badly tuned satellite dish.

The fragile chain between designer, catwalk, collection, and street has been irreversibly severed; its artificial ecology demolished. We have entered an intermediate phase where the industrial monocultures are still dominant, but detached from their traditional creative sources. The individual has been drowned out by the mass-scale power of corporate management. Alhough designers such as Vivienne Westwood may have been influenced by the growth of "fashion" sportswear, precious few sportswear firms have been influenced by her or any other old-style designers.

Manufacturers who operate out of a traditional material base are paralyzed in the face of change. Denim manufacturers pour marketing dollars into nostalgic advertising. Levi's massive success in increasing sales through the associative power of 50's soul and rock 'n' roll in carefully lit retro-fantasies have given others a new impetus toward marketing denim. Sportswear companies are a little more dynamic, relying on material innovations for the continued replacement of

hardware, but their collections are created through a relatively dull combination of functionalism and unrefined marketing. The "new" is now defined by corporate teams with all the antipathy to art that only business-school training can instill. Design has become just another marketing tool for brands, marketed in the same fashion as the newest videorecorder and breakfast cereal. Faced with the mighty power of TV culture and its opportunities for lifestyle advertising and associative sponsorship, the fashion world is out-gunned, out-flanked, and out-smarted. Who needs a temperamental style guru laying down the law when a bar chart will tell you how much Bo Jackson's name on your product will yield as bimonthly gross?

The World of Covert Design

Hope remains. Resistance to the corporate juggernaut has sprung up in London. Fighting fire with fire, a covert design movement hopes to undermine the monoliths and make the insidious march of corporate fashion explicit. Covert merchandising rides the wave of corporate fashion, reclaiming mass media images for their own ends. As one covert designer puts it, "When Coke or Nike make a T-shirt, they are using carefully managed image-filters. We undermine that management process, not by copying what they do, but by accelerating it. The corporate domination of fashion is inevitable. The one way to stay ahead of the game is to take control by being one step in front. The only way to compete with the power of their icons is to access them for your own ends — 'hack' them, if you will." Covert designs are *not* copies. No original exists. "Copying a Chanel of Gucci T-shirt would be like exhuming a corpse. There are no 'originals' for our designs, except the clothes themselves."



Photographs by M. Cairns

In recent months, Sony tracksuits, Atari sweatshirts, and even Nintendo Super Mario Brothers jeans have appeared to an enthusiastic reception in London's clubland. From The Bank of Saudi Arabia to Apple, no corporation is safe. Inspired by the corporate future shock imagery of *Blade Runner* and Cyberpunk fiction, the clothes are so difficult to distinguish from officially sanctioned products that a booming export trade from London to Tokyo has resulted. In the post-modern world of covert designing, *nothing* is a forgery. "Devaluation through perfect imitation" is the covert designer's slogan.

At the apex of this assault is London designer Angel Biotek, whose new range of clothing is arranged around the theme of information anxiety. Her designs jumble image cues like flipping between adverts on cable— an uncompromising mass of twisted logos and slogans as aggressive as a walk through Times Square. This is appropriationist art one step further down the spiral towards inevitable corporate apocalypse, where every sensory imprint will come complete with a trademark and copyright sign.

As we careen, blissfully unaware, into image saturation, Virtual Reality should play a large part in waking the West from the fashion dream. Terence McKenna has already proposed that, with the aid of projections from orbiting satellites, we may be able to beam down a "virtual world overlay" onto the planet. Cyber-






equipped subscribers could then experience the world with "subtitles." McKenna believes that Virtual World Enhancement could have the extremely desirable effect of "shifting all the rubbish into an electronic reality." No more billboards, no more junk mail, no more advertising (except, of course, for the wireheads who choose—or are bribed—to tune in), thereby eliminating in one fell swoop all the superfluous crap that we are indiscriminately bombarded with, and all the shit-for-brains who actually like it as well.

Cyber-suits

If functionalism has its day, as it surely will, the cyber-suit may be *the last garment*. Fabrics technologies being developed by the likes of petrochemical giants such as ICI are already coming up with materials that will keep you warm, keep out the rain and let you sweat. These materials are also comfortable and flexible enough to be body-tight without being constricting. These cyber-garments could literally become second skins within the next 20 years. With material-bacterial symbiosis, they could even become self-cleaning—*eating* dirt, perspiration, and stains. And you can throw away your one-a-day vitamin tablets. The Japanese are perfecting fabrics impregnated with vitamin substances that can be absorbed dermally.

Virtual reality technologies are telescoping at such a rate that, within a similar time scale, eyephones could be no more cumbersome than a pair of glasses. Additionally, fiberoptic monitors and remote sensor equipment could be sewn directly into the fabric. Throw in a few 21st-Century accessories like micro-bio-monitors, miniaturized self-adjusting brain machines, and ultra-trainers in the soles for smart ergonomics, and you've got a mobile, smartly-dressed, fully-enhanced 21st century human.

4-D "Deep" Holographic Clothing

Material innovators with any genuine creativity are rare in the extreme, but the London design house, Space Time, seems to be a singular exception to the rule. They've worked with heat-sensitive liquid crystal designs that change color according to your body temperature, and with patterns that appear only under ultraviolet light. But their major achievement to date has been the development of the world's first holographic fabric, which they already use on their full collection, from jeans and jackets to organza tracksuits.

The designers, Mia Manners and Richard Sharpe, are trained holographers. Together with award-winning holographer Patrick Boyd, they're now designing 4-D "deep" holographic clothes that change according to the angle of view. Holographic fabric also allows the exploration of completely new body textures and surfaces. Space Time's ultimate holographic suit would allowing wearers to program pattern changes according to mood or whim. "Fashion" becomes entirely a matter of software. Designs would take on the quality of customized tattoos.

Bio-efficient Alternatives

By fully exploiting the dynamics of technological innovation, Angel Biotek and Space Time work towards the destruction of the industry that spawned them. In an attempt to resist this impetus, some fashion designers are making half-hearted stabs at ecological soundness. But pollution-free dyes and organic, unbleached cottons are expensive and difficult to obtain. In an industry whose deity is turnover, it's naive to assume that such a radical sea change can be accomplished without a technological transformation in its topography. Clearly, the waste has got to end. By the beginning of the 21st Century, the pressure to conserve is likely to be monumental. As functional innovation compresses our clothing needs, the fundamental need for human decoration is likely to go more and more unattended, and the fashion element within the clothing industry will play a diminishing role. This needn't happen. With the cotton mills and chemical plants lying dormant, we will need to find genuinely bio-efficient alternatives. One result will be a redevelopment of the traditional role of craft. Thousands of years of resource wisdom will take the opportunity to reassert itself. The morphogenic fields of a myriad of micro-cultures will resonate once more to form a full rainbow of human decoration. Everything that makes *National Geographic* a better fashion read than *Vogue* will be liberated. Not only can traditional crafts goods make optimal use of natural resources, they can also serve to recycle waste. Oxfam's clothing division, Traidcraft, already stocks a range of clothing and jewelry made from rubbish. Ballpoint pens become necklaces; tin cans, earrings.

Technology will do no more than free us to reevaluate what is genuinely important. The fashion world of the late twentieth century sees traditional clothes-making skills as (in the words of Chanel's designer Karl Lagerfeld) "boring," and technological innovation as frightening. But the fashion machine is running close to empty. The crucial jump from hardware turnover to the softer, less wasteful, post-industrial future, will clearly be realized through a combination of the archaic and the cybernetic.



Plastic People

by R.U. Sirius & in conversation with Dr. Forshan

Plastic people, oh baby now you're such a drag.
—Frank Zappa, 1968

So here I am sitting in this urban café in jeans and a t-shirt when an absolutely stunning blonde takes the table next to me.. Autonomically I glance her over. She notices and exudes total disinterest. I return to my book, respectfully leaving her to her privacy. But what if I had slipped into 6949Arnold Schwartzenegger or 2424Prince on the way out of the house. HA! Things would be different then. Fuck Charles Atlas. Calling Dr. Forshan!

But then again, of course, if I can do it, she can too. What does she really look like... and do I really care? Oy, that's a Chinese man with a heavy New York Jewish accent and a style of humor to match. And *now*, since I'm done up as 6949Arnold and all — *he* looks *me* up and down. But is he really a man? Or rather did he start out as... and do I really care?

Be honest. Looks are important. Hippies may move to the lowstim environment of "the country" to find real values and forget about such, and sure, the short-term memory loss will allow them to escape the banality for a while. But somewhere back there, just about puberty, there's some trauma, some drama or whatever — where you kinda tried to feel out how the one in the mirror stacked up against the other kids.

Body by Forshan: your attention pingpongs between the Morgan and the breasts. This is not a model, breathes the narrator, this is a patient. This is a perfect pitch. Those breasts can be yours—the matched set, fully installed, patient not included—for only $80 a month, 19% interest and up to five years to pay, thanks to Dr. Forshan and the finance company of Hudson & Hudson.

MONDO 2000: You're famous for controversial advertising.

DOCTOR FORSHAN: I happened to be the first plastic surgeon to advertise, but I certainly am not gonna be the last.

M2: That "Body by Forshan" ad is really brilliant, actually.

DF: Yeah, I mean, it's been tremendous. And it fits. I mean here I am, I'm a



Courtesy of Cinefex

board-certified plastic surgeon, I've taken every test, examination, I've gone through every form of criteria that they've asked me to do, and then I can't tell anybody about it?

M2: Why do you think it was controversial?

Dr F: Because it was new. But I think it was done with a fair amount of aplomb. I think that maybe the medical community was not quite ready for it.

M2: Since it's a medical thing, people expected the advertising to be more sober and less playful?

Dr. F: Yeah, exactly. But, you know, if you're gonna advertise, you want people to take notice. That's why you do it. And so we did it the best that we could. We hired a first-class organization and we went to a first-class magazine and we did what we wanted to do. We never had any criticism for it from any of our patients, either. So obviously the criticism comes from those who were not smart enough to think of it themselves or who were jealous that we did it.

The process of choosing a mate has deep biological roots. With the revolution in birth control and in-vitro birthing, the bio"logic" behind this natural selection process recedes and choice becomes an issue of aesthetics. Still, the biological instincts remain deeply imbedded. As we enter the age of popular plastic surgery and physical reconstruction, there is a tendency to recoil at this *genetic deceit.*

This crime against history, plotted to service beauty contestants and the aging rich, is now committed by the *People* magazine-reading middle class—another radical disjuncture, another reality hack emerges from consumerist frenzy. We do it *all* for you, indeed.

RUS: Are there any famous Forshan faces that you can tell us about?

DF: There are many. But they can't be discussed. Any plastic surgeon worth his salt would never discuss his private patients. Now, many have done that to enhance their practices, but I just don't believe in that. I think celebrity endorsement is the weakest form of advertising...

There's an interesting trajectory to most personal responses to medical technologies that alter the human biological fulcrum. (Think of cryonics and bio-chips.) It goes something like this:

- *You first find out about it.*
  It sounds weird and creepy (unless you're New Edge or stand to profit from it).

- *It gets safer and cheaper.*
  Upper middle class people start to do it. You're still not sure. It seems unnatural.

- *It gets even safer and even cheaper. "Everybody's doin' it."*
  You do it! (Unless you're politically correct or a religious fundamentalist, in which case you wait until)...

- *It's real safe and absurdly cheap*
  You're still critical of this consumerist cult but you do it anyway (unless you're a religious fundamentalist, in which case you start writing letters and making bombs).

M2: What is the cutting edge now in your field, what are the new techniques?

Dr. F: For younger people, there's body contouring through liposuction surgery. This procedure is probably the most common surgical procedure being performed in the United States now — it's extremely safe and amazingly effective. It's a really neat procedure.

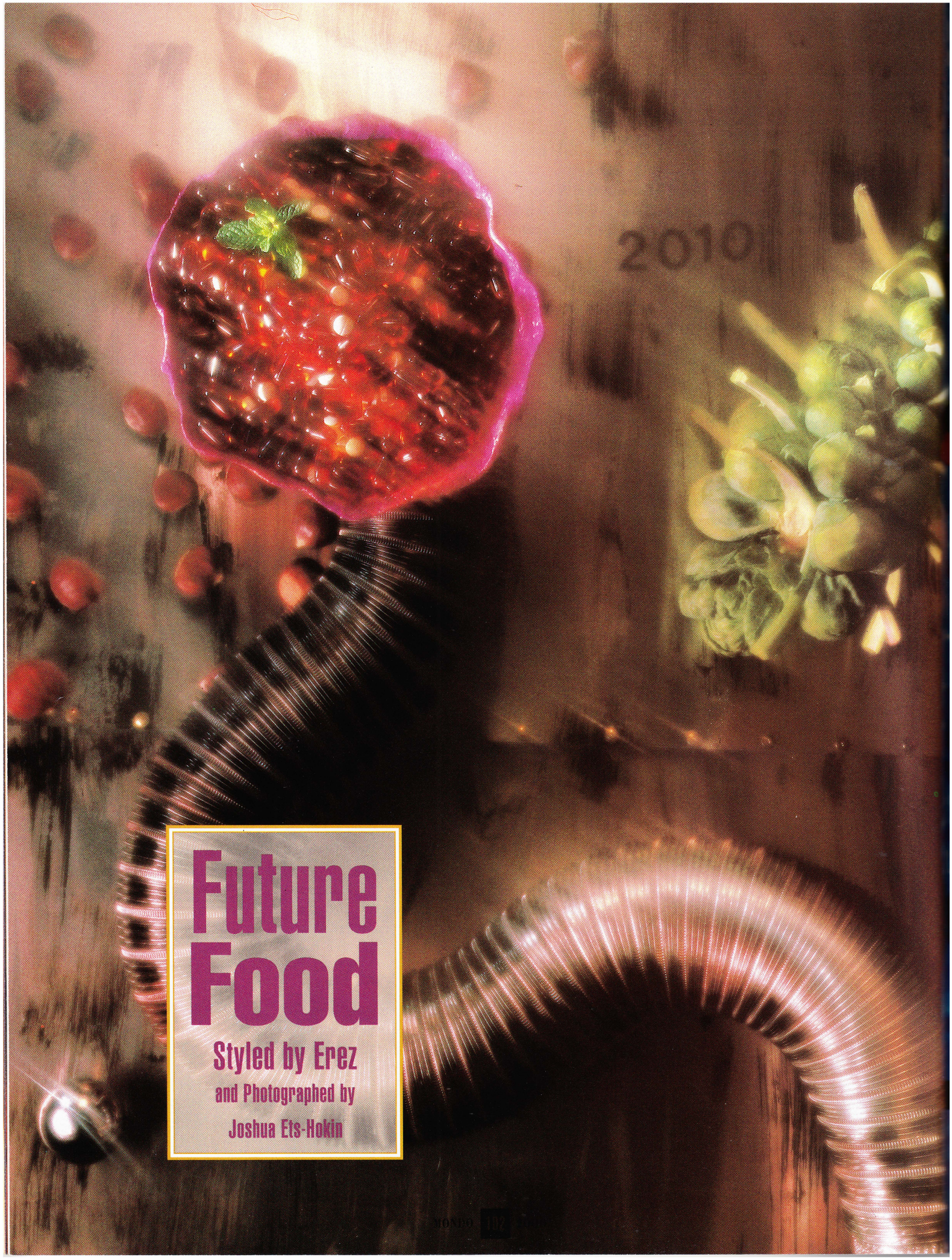
Something kinda new is what we call facial augmentation surgery. We're actually placing silicone or silicone-type substances into the face to enhance its appearance. The more recent version of this is called submalar augmentation, a form of cheek enlargement that was introduced by Dr. William Vinder in Los Angeles. This has become extremely popular. For young people who don't need a face lift yet but want facial enhancement and some rejuvenation, this procedure can provide them with a very nice facial rejuvenation, and maybe put off their face lift for 3 - 4 - 5 years.

M2: What do you think will be possible, say, into the first decade of the 21st Century that isn't possible now?

Dr.F: I think the main thing's gonna be drug therapy manipulation for the prophylactic management of aging. I think changes in appearance will still require a surgical process for the forseeable future. But the maintenance of youth and energy may be manipulated either by genetic recombination or drug management.

Right now, the plastic surgeon is a physician that treats the disease called aging. He's no different from a cardiologist or an internist who treats diabetes or the dentist who treats dental disease. Aging is a process that begins at birth and ends at death—it's a continuum. It's the most common disease known to man. And I think that it's foolish to think that we shouldn't manage and treat this disease process.

It's autumn, 2010. I'm hangin' out in an urban café. All of the girls look like Tiffany Fonda, nova starlet. All of the guys look like Rob Lowe, Jr. 'Cept for the people at our table. We got sick of that shit. Mu has gone for the tarantula look—8 silky limbs and a double-diadem of eyes. St. Jude is still covered with fur; tonight she's a seal point. Jas., who went biomech, glitters as Astro Boy. Bart sports a retro mohawk made of his own cloned hands. And me, I'm pragmatic. My kangaroo pouch is stuffed with printout edits. One extra arm holds the menu. I've always thought that feet should have wheels, so... And my 2 add-on eyestalks are twitching around checking out the Tiffany Fondas while I'm giving full attention to my friends. 493892Tiffany sits down next to me. I glance her over. She notices and exudes total disinterest... M



Future Food

Styled by Erez

and Photographed by

Joshua Ets-Hokin

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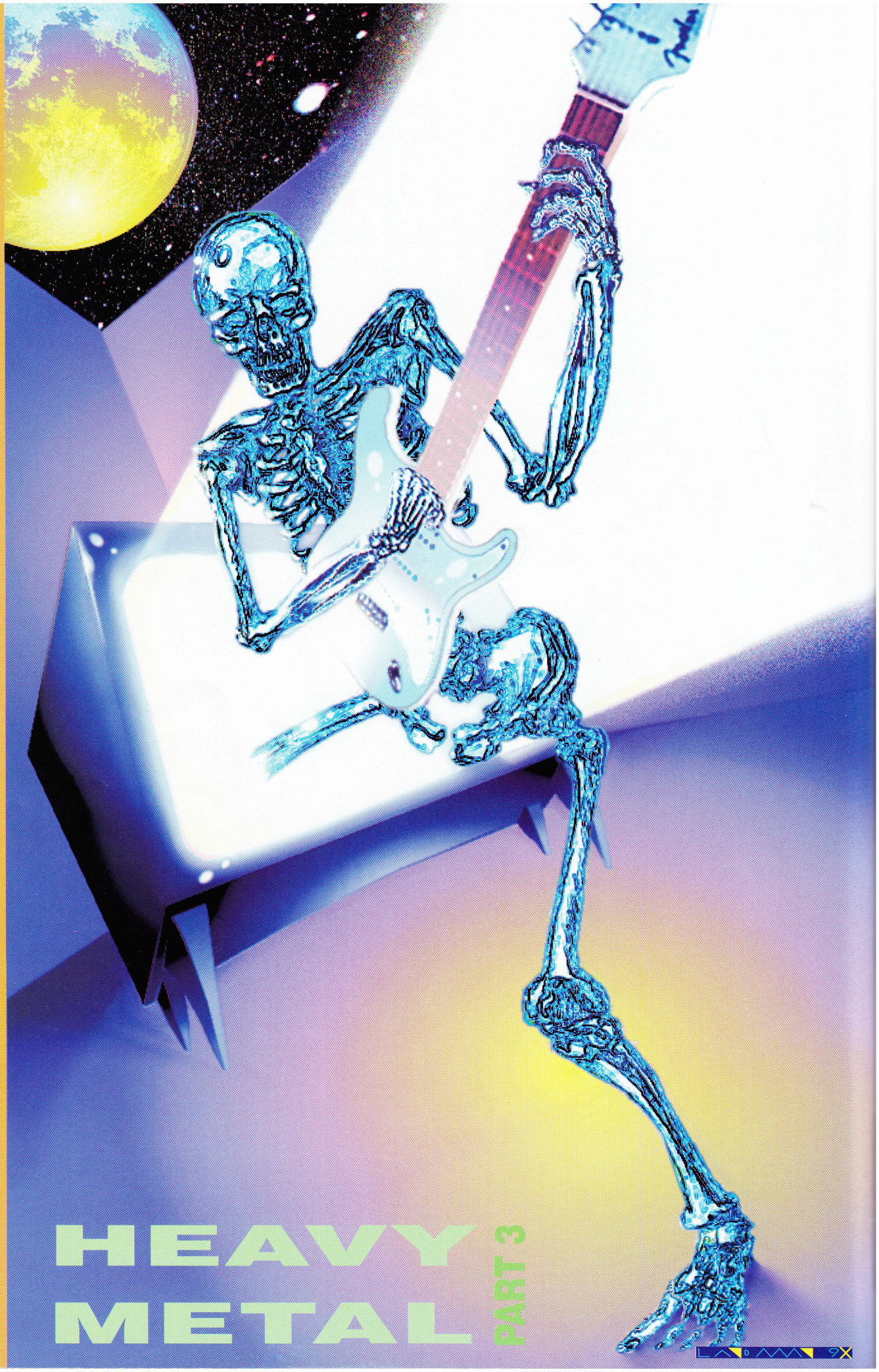
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THE SHADOW WORLD OF HEAVY METAL PART 3



Electronic Guerilla Warfare

Gracie and Zarkov

Some may imagine that there is an artistic way of disarming or overthrowing an adversary without too much bloodshed. However agreeable this may sound, it is a false idea which must be demolished.
—Karl von Clausewitz, On War

Why should freedom of speech and freedom of the press be allowed? Beliefs are much more fatal than guns.
—Lenin

What has sparked the lightning flash of freedom through the Communist countries, if not rock music and American movies?
—Jacques Delors, President of the European Commission and architect of the Common Market's planned 1992 economic integration.

The Soviet Union is experiencing a boom in "video salons," cafes equipped with VCRs to show the latest Western films and music videos.
—The Economist

Heavy metal bands may not know it, but they are part of a world "conspiracy" to complete the Eighteenth Century Illuminati's program of democratic revolution, peace, and prosperity as it was first described in Tom Paine's *The Rights of Man*. All over the world, war is being waged against the forces of oppression. This war is not being fought with guns, is not centrally directed, isn't financed by massive taxes or achieved through heroic sacrifice. It is being fought with electronic signals by millions of independent individuals, some of whom are getting very rich.

We have entered the age of Electronic Guerrilla Warfare. Its weapons are telephones, faxes, modems, satellite TV, personal computers, Walkmans and VCRs, the necessities of modern culture. Tiananmen Square could not have happened without them. The whole world was watching the "People's" Army's refusal to intervene, followed by the bloody massacre. Tiananmen Square made possible the precipitous collapse of the Eastern European regimes because the loyalty of their troops was impossible to guarantee. There's no way a developed society can defend against electronic guerrilla warfare. Prohibiting these devices will cripple economic development. 1984 has been cancelled by the silicon chip.

A curious aspect of the Salman Rushdie affair was that the Ayatollah understood the purpose of freedom of the press better than its Western defenders. "Écrasez l'infame!" was Voltaire's motto; he wished to crush the infamy of repression with the force of his pen. The *Philosophes* were conscious that the very purpose of freedom of the press was to destroy the traditional cultures of the *ancien regime*. Western publishers and media seem to have forgotten this. Fanatics and traditionalists everywhere haven't. It's no accident that MTV's Headbangers Ball uses footage of the Nazi book burnings for station breaks.

The most popular "video salon" movie among Red Army veterans is reported to be *Apocalypse Now*. We personally had a chance to talk to a 14-year-old HM fan who is the son of a Soviet official from Novosibirsk, U.S.S.R. He was totally up to date on HM bands and their videos. We asked him: "Who are the most popular bands among you and your friends?" His reply, "Slayer and Metallica." He and his friends will not grow up to be good Party apparatchiks.

Its weapons are telephones, faxes, modems, satellite TV, personal computers, Walkmans and VCRs

"Are my eyes really brown?" Rick Blaine to Nazi SS Major Stroesser in the film Casablanca.

"Are you a big fan of mine, too, Senator?"—Dee Snyder of Twisted Sister to Senator Albert Gore

"It's still the same/only the names have changed" —Bon Jovi, "Wanted, Dead or Alive"

In the mid-1950's, U. S. Senator Joseph McCarthy held his infamous "witch hunt" hearings to root out the "Communist menace." His inquisition was aimed particularly at the entertainment industry. He ruined numerous careers. In the summer of 1985, U. S. Senator Gore held the PMRC-inspired "Rock 'n' Roll, threat or menace?" hearings. Dee Snyder, the frontman of Twisted Sister, was called to testify. Nattily dressed in blue jeans, mirrored sunglasses, and a black Twisted Sister T-shirt, with his hair freshly permed, he proceeded to explain to the senators that he was protected by the U. S. Constitution, and if they were offended by his music, that was too bad. As a result, his album went double platinum. The video, "We're Not Gonna Take It," based on an actual incident from Dee's adolescence, is a cartoonish, in-your-face attack on the kind of stupid authoritarian repression typical of so many parents and promoted by the PMRC. In 1988, Senator Gore lost his bid to become President of the United States.

Twisted Sister also pilloried the mindless regimentation of American high schools in their video "I Wanna Rock," but that's like shooting fish in a barrel. Even a committee of business leaders representing the Fortune 500 Corporations reported to *The Wall Street Journal* that schools opt for "control rather than education," and offer an environment that "more closely resembles a factory than a haven for learning."

So it's not too surprising that rebellion and protest have become commercially viable products. As Jacques Delors observed, the impact of rock videos and movies is enormous. A best selling non-fiction hardback may sell fewer than 100,000 copies. In the world of heavy metal, you wouldn't even be considered a cult band with such disappointing sales. A record or video's reach is multiplied when it's

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A Message to the MTV Stars

(Inspired by 2 Live Crew)

We have to hand it to 2 Live Crew, they have managed to offend almost everyone, even us. They illustrate perfectly the paradigm of electronic guerilla warfare. The more commercially offensive you are, the more likely that the yahoos will harass you. But getting harassed is a positive career move if managed properly. When the radio won't play your records, getting arrested will get you on every newscast and talk show. Banned records sell.

By playing "pin the tail on the honky" with their follow-up record "Banned in the U.S.A.," 2 Live Crew will be in the media for months and sell millions of records. They will not suffer the fate of Lenny Bruce, primarily because they have the money to defend themselves.

Fighting the yahoos in court takes commitment, time, and money—lots of money. It's always easier for a group to brag about how "offensive" they are, but to duck the occasional obscenity charge. The entire record industry gave in to the PMRC, instituting "voluntary labeling" rather than launching an all-out defense of free speech.

We are happy that 2 Live Crew has enough rage (or commercial sense) to take on The State. By believing themselves to be politically disenfranchised, 2 Live Crew will have the staying power all too often lacking in the more comfortable liberal rock establishment.

Unfortunately, electronic guerilla warfare has its limits. The State still has the guns and the tanks. What happens when The State draws the line?

In Tiananmen Square, it meant death for those crushed by the tanks. In the U.S.A., the yahoos

played for multiple listeners. Last year, Americans spent $25 billion dollars on records, compact discs, videos, and cable TV. Of that, teenagers alone spent over $2 billion on records, tapes and CDs. The numbers for Western Europe and Japan are of similar magnitude. In his best year, the now-imprisoned televangelist Jim Bakker grossed about $130 million with his PTL Show. That is less than what two platinum metal bands gross for records, concerts, and T-shirts in a good year. For that same year, the PTL netted less than $20 million. That's less than Bon Jovi netted in their best year.

For three decades now, young unknowns have gotten rich selling a message of protest or rebellion against government, church, parents, and social mores. There is also the occasional blast of social conscience. On the modern metal scene there are currently videos about the threat of world pollution (from Metal Church, Testament, and Nuclear Assault — this one comes with subtitles!), and anti-suicide messages from Suicidal Tendencies ("How Can I Laugh Tomorrow When I Can't Even Smile Today?") and Kix ("Don't Close Your Eyes"). Anthrax brings home the plight of the homeless in "Who Cares Wins," while Fate's Warning explores the isolation of the elderly. In a concert video, Judas Priest tells the crowd, "We don't need no parental guidance here." In the age of electronic guerrilla warfare, no one needs an imprimatur.

Total immersion in a heavy metal subculture with total identification with such bands as Slayer and Metallica... (is) ...a sign of potentially destructive alienation.
—Journal of the American Medical Association.

Heavy Metal listeners are affected by a psycho-physiological mechanism of addiction to the music.
—Journal of Soviet Medicine

"I went to your schools, your churches, and your institutionalized recreational facilities, and now you tell me I'm crazy? I'm not crazy, you're the one that's crazy!", Suicidal Tendencies correctly points out in their video "Institutionalized." A similar point is expressed in the same band's "Bad Brains" and in Anthrax's "Madhouse." The Soviet Union was widely condemned for its practice of declaring dissidents "insane" when their only symptom was criticism of Soviet society. Such practices are not confined to totalitarian states. *The Wall Street Journal* recently carried feature stories on how American parents are getting their kids committed to psychiatric hospitals because they will not conform to their parents' belief systems. In less extreme cases, the kids' point of view is merely denied as valid. Society controls by substituting its version of reality for the one directly perceived by its members. Heavy Metal is essentially kid's music. Without imprimatur from government, church, or state, it speaks of and to the concerns of its audience.

The various genres of Heavy Metal provide brands of pre-packaged rebellion in the marketplace of ideas. A fan's purchase of his favorite band's latest

• *continued on next page*

"The tree of liberty must be refreshed from time to time with the blood of patriots"
—Thomas Jefferson

judicially terrorize small time record and video dealers who make a living selling "obscene" records or videos. These people will *only* lose all their assets and be forcibly detained for months or years as "pornographers." And they don't have a rock star's fortune to spend on a legal defense. The prosecutor lets them keep their lives but extracts their "fortune and sacred honor."

In our opinion, not swilling from the NEA pork barrel has become an act of high moral courage akin to hiding Jews from the Nazis. If the grant-grubbing *artistes* were *really* any good at offense they'd be rich like 2 Live Crew. Refusing grant money doesn't do shit for someone convicted on obscenity charges. Because the liberal defenders of free speech aren't effective, we have the likes of 2 Live Crew on the front lines.

Too many artists, musicians and writers think legitimate political action is a waste of time. Unfortunately, the yahoos don't. The "subliminal messages expert" who testified under oath at the recent Judas Priest show trial that he sees sexual messages in Lincoln's beard on the five dollar bill doesn't believe that court action is a waste of time. Charles Keating, the archetypal S & L thief who donated much of his ill-gotten gains to his "anti-pornography crusade" doesn't believe legislative action is a waste of time.

Our civil liberties are under attack. But the yahoos don't have to win. What moves our government is media exposure and money. The record industry has both. Who is better at media manipulation than the entertainment industry? The record industry has made millions from offense. We believe that those who have profited from the First Amendment should pay for a concerted counterattack on the yahoos. We have the principles on which our country was founded on our side, and we can easily outspend them.

Specifically, we propose a Political Action Committee and legal defense fund—the First Amendment Millennium Fund. All those *individuals* whose livelihood depends on the First Amendment could donate 5% of their annual take until the millennium. The goal would be to roll back the current attack on civil liberties and establish absolutely *unconditional* free speech in the U.S.A.

In a democracy, you get the kind of government you deserve. In the US, you get the kind of government you pay for. Pay for defense of the First Amendment. We're ready to write our check, what about you? M

Gracie & Zarkov

It is fought with electronic signals by independent individuals, some of whom are getting very rich

album shows him that he is not crazy or alone. Adults blame the music but we should instead listen thoughtfully to its message. It essentially comes down to freedom. "I want out/to live my life, and to be free" as Helloween succinctly tells it.

America is the well-wisher to the freedom and independence of all.
—John Quincy Adams, Fourth President of the US

The great strength of the totalitarian state is that it forces those who fear it to imitate it.
—Adolph Hitler

What do you mean I don't support the system?
It's still "We the People," isn't it?
—Megadeth, "Peace Sells, But Who's Buying?"

We Americans should be ashamed of our government. We have been the richest, freest nation in the world for so long that we've become smug. With the collapse of totalitarianism as any kind of serious threat to the survival of democracy, we no longer have any excuses for not living up to the ideals of the Founding Fathers.

The deficit cannot be cut because we all have a stake in the government porkbarrel. The House of Representatives has a re-election rate (well over 90%) so high that it would be an embarrassment to the old style Politburo — even *The Wall Street Journal* refers to it as the "new House of Lords." Our popular culture promotes freedom while our government supports foreign dictators. The problems of homelessness and poverty could be readily solved with a negative income tax. But the conservatives are against it because it gives people "something for nothing," while the liberals are afraid that the welfare establishment would be eliminated. Our inner cities are being destroyed by drug profit wars. America's "Drug Czar," William Bennet, is an imbecilic authoritarian straight out of a Twisted Sister video screaming for more prisons. The U.S. has more people incarcerated than any civilized nation except South Africa and the U.S.S.R. Over two-thirds of these inmates are incarcerated for drugs. Legalization would eliminate the criminal offense and the profits just as the repeal of Prohibition did. The anti-pornography movement is just another excuse for censorship and sexual control. Bills currently under consideration in Missouri, Iowa, and Florida against obscene lyrics, aimed at censoring Rap and Metal records, would also technically ban the sale of almost every opera in the standard repertoire.

Heavy Metal isn't responsible for our problems. Despite its real negatives and ambivalences, the ultimate strength and value of HM lies in its underlying dedication to the individual's efforts to create oneself in spite of societal pressure to conform. HM's all too apparent negatives come from the shadow, the painful repressions and disappointments in the souls of its individual artists. It would not be commercially successful with its dedicated and fanatical followers if its message did not resonate in the souls of its audience. One sixty-five-year-old fan called HM "the reaction of a free spirit to a dark and cruel world." Until our society recognizes and practices a form of child rearing which emphasizes freedom and individual responsibility over mindless conformity, the shadow of repression will fuel what is offensive, frightening, negative, and twisted in Heavy Metal.

We contend that what is negative in HM would disappear if the "pursuit of happiness" was seriously recognized as a right. For in the absence of the shadow, HM would only be loud, boisterous, party music. Intense experience—including intense music, intense sex, intense euphoria, and the pursuit of these experiences—is the positive aspect of HM and of rock and roll in general. If one is responsible enough to pay for one's own good time and not harm innocent third parties, what right does a supposedly free and democratic society have to prevent this? Some may disapprove, as is their right, but not all of us wish to mellow out into grey suburban couch potatoes or politically correct Birkenstockers.

Freedom is dangerous, as its opponents have pointed out since the Enlightenment. In free societies, people are free to make mistakes. But two-hundred-plus years of action by the Illuminati's "freedom information virus" have convinced most of the world that freedom is essential. Now more than ever, we are confident that freedom will triumph. There is no turning back.

I can forsee a music that is beyond good and evil.
—Friedrich Nietzsche

In this world we're living in, we have our share of sorrow,
The answer now is don't give in, aim for a new tomorrow.
—Judas Priest, "You've Got Another Thing Coming."

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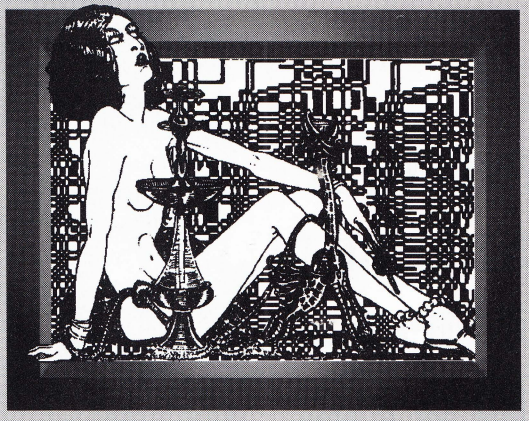
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POLITICS IS THE ENTERTAINMENT BRANCH OF INDUSTRY

FRANK ZAPPA: I haven't decided to run for President, but I *have* been thinking about it. If I do it, I would do it without party affiliation. The problem is, you need maybe $2 million just to get your name printed on the ballot in all the states and that's without any cash for any kind of campaign. And the minute you're in the megabucks category that you need to campaign, you owe somebody a favor. So I've considered the possible strategy of the non-campaign where I say, "Okay, I'm available as a candidate. I've got my name on the ballot and when you get tired of everyone else, just vote for me." So it's pretty straightforward and awfully cheap. Cheap, but you're talking about millions of dollars just to do the paperwork to make it happen. The only possibility for change is if somebody can actually get into the government who is not a crook.

ROCKHEAD: I question whether politics is the ultimate vehicle for change.

FZ: Well my idea is that the only way that you can exert influence over the media is to be President. I always say that politics is the entertainment branch of industry. A President can make things happen. Not by laws, but by force of personality. You can't really legislate belief, but you can guard against legislation that forbids free speech.

I think some of what we refer to as social change is what I would refer to as social engineering. It's stuff dreamed up by people who circulate in the background at the White House for publicity photo opportunities, and then the engineering is delivered to the victims by the media. That's a top-down kind of social change. The other version of it is the Czechoslovakian model where people say, "Screw this. It doesn't work. We're going to have a revolution. We're getting these bastards out of here." And they did it. Now whether or not they're ultimately going to solve the economic and social problems in Czechoslovakia remains to be seen, because in his first days in office, Havel made a few blunders. Like he granted amnesty to 20,000 people in prison at once... "Okay, you're free." Well, that was nice *except* that there weren't 20,000 apartments available. There weren't 20,000 jobs. Three hundred of them went out and committed more crimes and the rest of them became the instant homeless in Czechoslovakia. Sometimes the best intentions turn out to be rather inhumane in their consequences.

Then, of course, you have the problem of the secret police. Everybody wanted to disband the secret police. They soon found that the number of people who were employed by the secret police force was about 50,000. And when you fire 50,000 people who are only trained to torture, spy and harass other people, that's 50,000 people who are dangerous to have out of work. They fired 500 of them and the rest of them are still secret police.

R: What are they doing?

FZ: I don't know. It's secret! They still exist. The best way that I've seen so far to deal with the secret police situation is what they did in East Germany. The students just walked into the secret police office, opened up the champagne, started drinking it, grabbed all the files. Now the opposition party, the man on the street in the opposition party probably has half a dozen dossiers in his back room. It's going to take a while to root out the people who abused the system before it changed over. Some of these people may never be brought to justice, but this is something that if it's *not* dealt with in each of these countries, is going to come back to haunt them. These people know only one profession. It's not like they'll be rehabilitated. What do you do with them? I don't know.

RH: On our refrigerator, we have a picture of you lighting a cigarette for the President of Czechoslovakia.

FZ: There's a funny story about that. His political advisors tell him not to smoke on Czech television, but it's OK to smoke on foreign television. So whenever he would light a cigarette, he would have them check and see who's taking pictures. I told him that if he had political advisors that were telling him not to smoke in public he was already in trouble.

I first went to the Soviet Union because I was curious to find out how true or false everything I'd received from the American media about the Russians was. So it turned out that I really liked the people. They're in a lot of trouble, obviously, because their system doesn't work. I would like to help them out.

RH How would you do that?

FZ: For one thing, they need technical information on how business works because for seventy years, it was taboo over there. Now Gorbachev says, "Go do business" and nobody knows how to do it. They don't even know the words. It's hard to discuss business with them because they don't even have the words in their vocabulary. U.S. business should regard this as a major opportunity to try to create solutions for social problems using those new governments as test tubes, rather than just a chance to sell stuff. As a nation, we

Illustration by Mark Landman



Frank Zappa for President

If they can clamp down on rock 'n'roll, there will be no transmission whatsoever of any politically controversial material to the kids

could benefit from their experimentation. I have the feeling that the way these emerging democracies are going to try to solve some of their economic and social problems may indicate ways we could restructure our situation here. The hard part about negotiating business agreements in the Soviet Union is getting approved by the bureaucracy. It's still a very messy situation. The whole idea of central planning is preposterous to begin with, because there's no God-like human figure who can make a plan that can efficiently control the economy of a place the size, the shape and the diversity of the Soviet Union. It just doesn't work. They built this enormous bureaucratic infrastructure to support the idea of central planning and it's still in place even though they're moving in the direction of the market economy. No matter how benign your suggestion is for a trade agreement or whatever you want to do, at the point where it has to be filtered through this bureaucracy—which as far as I can tell is not only incompetent but also corrupt—you're in the realm of bribery.

RH: Yep. So is your approach to go directly to individuals on a more personal level?

FZ: Yes. The problem is, the government sponsors the bank. Everything in Russian life requires permission. *Everything.* Along with Glasnost, came all the rage that's been pent up for all these years. All the factions are coming out. You have people walking around saying, "Kill the kikes. Save Russia." When I was there in January, some group had posted notices that starting on May 15, they were going to begin to kill Jews. That doesn't appear in the U.S. newspaper but I'm telling you, it's real and it's out there. It's escalating everyday, increased racism along with increased nationalism. You couple this with the ambitions of Boris Yeltsin, a man who never talks about freedom in his speeches, he only talks about equality. He talks about that kind of equality where everybody stays at the bottom of the sludge. And now he is the president of the Russian republic and they've taken the first step toward secession. It's not going to be an easy thing to deal with over there, especially with the U.S. media trying to make it look like Gorbachev is on his way out. If he does go out, you're going to be in pretty bad shape internationally because Yeltsin is not the kind of diplomat that Gorbachev is.

Who are the Brain Police?

RH: In your book (*The Real Frank Zappa Book*, Simon and Schuster) you had some thoughts about human stupidity.

FZ: Yes, I said it's the most abundant element, more plentiful than hydrogen.

RH: Great theory.

FZ: That's a fact! It takes on such strange configurations. Did you see *Nightline* the other night with that lawyer that's out to get 2 Live Crew?

RH: Yeah, we were just talking about that. Your energy in defending free speech in rock lyrics has been really great.

FZ: I did three interviews today. They're calling me all over the place. Today I was invited to go on the Donahue show with 2 Live Crew but I turned it down because I think Donahue is an exploiter. I did an interview with the *Miami Herald* and with *USA Today*, and another paper and public radio. It started off as a hobby and now it's almost turning into a full-time job. And I heard a rumor today that California is getting ready to ban 2 Live Crew. I mean the whole idea of banning this is so absurd. The only people who believe in "dirty words" are the people who have a certain religious viewpoint. That religious viewpoint is theirs to cherish but it should never be ensconced in legislation. That judicial decision in Florida said something to the effect that the album incites people to filthy *thoughts*. We're beyond censorship into the realm of thought control. Look at it this way. If this judgement is upheld, it lays the groundwork for legislating *thought*. And in order to enforce the legislation, you'll have to have brain police. That's really the significance of what's happening here. It's the ground floor of a body of legislation that can condemn and punish manufacturers and retailers for distributing things that lead to unwanted thoughts.

I mean—look at Florida. Florida used to have a reputation for being kind of a fun place. Today, it's got a governor who announces that certain types of bathing suits will be forbidden! And people are going to be arrested for wearing them!!

RH: Why do you think people are still so apathetic about getting themselves organized to influence what's going on?

FZ: Because there's a reluctance to do things that aren't fun. There's nothing fun about spending days and weeks on end arguing about things like this or doing the drudgery of getting a mailing together or organizing stuff. Also people on the liberal side of the fence are very disorganized and don't agree with each other. It's hard to organize because everybody has got his or her own thing. It's part of the reason for supporting freedom... being an individual. And when you have your own thing, you don't really need to cooperate with somebody

else's thing because it's impinging on *your* thing. And so the other guys have an advantage because they've only got one thing; it's the idea of a controlled state. That's their thing. They've got it and they all agree on it. And they're organized. It's very easy to organize that. It's a simple proposition.

I don't think that there's much of a passion for liberty here because people take it for granted. It's a different story in the Eastern countries because they've seen it first-hand. We have a secret police here but we don't call them secret police. There they call them secret police, state police. You knew it was there. There was always repression. You were always being watched. From your factory to your home, in your car, in a disco, you were being watched. And people got tired of it. We haven't even realized that we have a similar situation in the United States. Every day on the news they're telling you that you live in the home of the free and the brave. Now I would say that the only people who could buy into something that patently absurd are people who graduated from the U.S. school system. That's the only way to make a society dumb enough to buy that line.

Look at how much money the Soviets had to spend in order to develop an educational system that was capable of drumming their bullshit into the heads of every citizen for the last seventy years. The down side is that it was brainwashing. The good part of it is that they had to make sure the population was literate so they could consume the propaganda. The Soviets are in better shape than we are because most of the people in *this* country can't read, write, spell, or do arithmetic very well anymore and these are all necessary tools for doing business.

It's a big problem. Kids don't learn in school. They learn from records, or from watching TV, or they learn from the street. Which is the real reason why some people are trying to put the lid on rock 'n' roll speech. Because if they can enact legislation that clamps down on everything in the world of rock 'n' roll, there will be no transmission whatsoever of any politically controversial material to the kids.

R: It's ironic that they're putting this legislation in place to say that people can't say sexual things in songs. It's probably what most people are thinking about all day anyway.

FZ: If only it were true. One of the interesting developments of the Reagan economic revolution is this syndrome of yuppies who can't have sex anymore. There's two dentists that work in this facility that I go to, and the younger partner admitted to me that he was a victim of this syndrome. He had lost all interest in sex because his work had become the most important thing to him. And I think you could easily describe this guy as a yuppie. Perhaps this is nature taking its course, because maybe it's good that the yuppies don't reproduce.

At one point I believe there was a militant lesbian organization that formed a coalition with a fundamentalist group to fight pornography. I think that there's a function for pornography in this society. And considering who needs it the most, I'd have to say it's the yuppies.

Flower Punk Redux

FZ: If you look at pictures from the Woodstock movie and see these people squatting in the mud, you'd say, "What are they going to grow up to be? Just look at these guys!" You know, they turned out to be Wall Street. It just goes to show you the flexibility of the human organism that people who would willingly sit in the mud and chant "no rain" periodically between badly amplified rock groups could suddenly turn out to be the ones to run the U.S. economy.

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It just shows the flexibility of the human organism that people who would willingly sit in the mud and chant "no rain" between badly amplified rock groups turn out to run the economy

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Escape from New York

by R. U. Sirius

Photographs by Bart Nagel

THE PAST

First of all, The Ramones.

I mean... where *did* they come from? Yeah, right, I know: Queens. But what I'm trying to get at is, how could some genuinely unintellectual guys from Queens pull off the most *utterly* original moment in the history of rock 'n' roll? Think about it. No way do dudes hanging out in a garage refining their versions of *Louie Louie* and *I Wanna Be Your Dog* arrive at: "OK guys, I've got it. We'll all dress alike—like sloppy 9-year-olds—and we'll all get the same no-hope haircut and pretend to have the same last name. We'll play *two*-chord songs at *triple* speed and write ludicrous three-stooges-violent lyrics without a lotta words—*Hey ho/ let's go / shoot 'em in the back now/ what they want/ I don't know / they're all revved up and ready to go.*"

Those of you who are too young to have been there couldn't possibly understand how totally out of context the sudden emergence of the 1975 New York scene was. In that world of post-hippie George Harrison/Eric Clapton rockstars doing the cry-in-your-beer and fusionoids jerking off 45-minute solos, there was *no* precedent for The Ramones, Talking Heads, Blondie, Richard Hell & the Voidoids, Television. Closest were Alice Cooper and the New York Dolls; there you got the first glimmer of self-conscious b-movie cartoon violence, but still done up in the sturm-und-dreck style of traditional metal rock.

And who could have imagined some nerds from design school singing odd-angled rhythm-driven songs about buildings and food: "don't worry about the government"? Or the cynical, coolly sexy, perfect pop of Blondie? I mean, the closest thing in the '70s to Blondie before Blondie was The Archies. Poised on that line between pop and bubblegum, Blondie did two things: created some fine pop, and made us admit that bubblegum was a helluva lot hipper than cosmic cowboys. Maybe every young kid with a guitar in New York City in 1975 read *The Philosophy of Andy Warhol from A to B* and got the joke.

THE PRESENT

It'll never happen again. And that's why I could be sitting in the Greek Theater in Berkeley watching The Ramones, Deborah Harry/Chris Stein, and the Tom Tom Club/Jerry Harrison (they referred to themselves at one point as "Severed Heads") and not experience it as a nostalgia trip. This music is still with us, along with the crazy eclecticism that generated it. The New Wave is the last wave. If it hasn't already been done, it *has* already been envisioned. What will you do—waltzes? Sinatra/Ferry crooning? Audio collage, neoromantic, neopsychedelic, funk, junk, silly-hillbilly, thrash? What, in the future, could surprise us? All-Robot groups? The Andrews Sisters comeback? Huge acid tests, when they finally give up and legalize drugs? Gotcha covered in all directions, and there's no space for surprise.

They say it ain't over till the fat lady sings. Roseanne's performance of the Star Spangled Banner didn't surprise us: it *is over*.

Of course, the only logical response to this sort of shit is "Let's dance." Which is why the Tom Tom Club's femme-psychedelic-sexy party funk topped the show. Ain't nothin' left but the p-funk, and Chris and Tina got the last laugh at the Berkeley show, Chris Franz even putting in a sly reference to our homeboys, the Digital Underground. *Let's get stooopid yaaaah.*

Interviewed by R. U. Sirius

TALKING HEARTS & SEVERED HEADS

Tina Weymouth & Chris Franz

A Nice Bloodless Revolution Quite Soon

TINA WEYMOUTH: We've done so many interviews, so probably we've got to talk about something...

MONDO 2000: Well, let's just hang out and talk.

TW: Well, we're probably thinking about the same things that you care about. I only got to read about 5 paragraphs of your editorial, but it was great. I mean, if you take it personally, you can really hate the press. You know, that's the last thing you think about when you want to be a musician. But recently, I read a really positive take on the press. This fella went on a seven-year media fast, and he had a vision that communicated to him the need for, or the inevitability of, the industrial revolution. The idea was that for people to make the next step in their thinking, they had to get away from the inbred small town ways of thinking. So the media is the outgrowth of that, from printing presses to satellites. And it's a great thing, because now everyone's seeing what everyone else is doing. No one can *really* get away with it for very long anymore because there'll be all these fingers pointing at them saying, "no, you can't do that." Like with South Africa. So that's a really happy positive thought.



"A song is three chords and a grudge." ...there's definitely more pissed-off kids

On the other hand, I remember sailing two years ago on our boat and thinking, well, this is all gonna be gone soon. Everything I was looking at was so beautiful, but it's all going. Even just since Talking Heads started, we've watched the pollution over the Southwest grow from invisible to a big orange streak exactly like the one over L.A. And who's gonna broadcast that observation if we're all just isolated without the connecting media? I just hope that they'll start to be a little more brave and say what is important.



...And to call people out on their bullshit. Including people like us. We have this platform where we can get away with spouting off political ideologies. I mean, rock stars are the worst.

M2: I watched MTV's New Year's *Look Back at the '80s* and they showed right-wing politicians making idiots of themselves and then they would have comments from rock stars like Frank Zappa and Lou Reed. And it was clear that the rock stars represent the only alternative political voice in American media now. I mean, you're sure not gonna get it from the Democrats!

TW: It's true. Chris and I were looking at some *Vanity Fair* article about Warren Beatty hobnobbing with the so-called high and mighty. And it was so funny because we suddenly realized that they're all a bunch of losers!

CHRIS FRANZ: George McGovern, Gary Hart. All these guys who failed to capture the imagination of... of anybody, actually.

TW: I hear that Gary Hart has captured the imagination of French women. (laughs).

Well, we're coming to the end of a great dynasty, you know. Like the great Chinese dynasties that became more and more inflated with bureaucracy, and more and more conservative and paranoid and outwardly law-abiding—Confucius and all that—but at the top, super-decadent. Just like America now. It's gonna come as a big surprise, but it seems reasonable that we're gonna have a nice bloodless revolution quite soon.

M2: Well, you've been going across the country this summer. Are people starting to get pissed off? Is that the mood out there?

TW: Yeah! It's funny, but you've got all these young bands coming up that, in the words of Dee-Dee Ramone, consider that "a song is three chords and a grudge." I mean there's definitely more and more pissed-off kids. And you've got a lot of kids, even little kids, concerned about things like homelessness and AIDS. And you know we still don't have human rights.

CF: We're losing rights all the time.

TW: But, yeah, the kind of kids we've been meeting, they're not gonna register for a draft or... you've gotta be kidding.

M2: I liked what happened during the Carter administration when they started up the draft. They couldn't get kids to register because the kids didn't read the papers, they weren't paying any attention to politics, so they didn't even know they were *supposed* to. That's probably even more true now. I think the level of alienation among young people in this country is beyond anything that politicians or journalists even begin to talk about.

TW: Yeah. Well, actually that was my feeling too, RU. But I've been meeting some great heads that are into underground holistic movements... politically and economically.

CF: They're not movements of image. They're actual movements of people.



It's a Free Country, Dmitri

CF: Lately we meet all these people from Russia backstage. It's kinda weird. I don't know how they get backstage, but they probably say, "Hi, I'm Dmitri from Russia and I'd like to meet the band." And the guys just say, "OK, come on in," because suddenly we all *love* the Russians. Which is great, really.

TW: Well, they just come around thinking, "Hey, it's a free country. I can go backstage if I want to." And who's gonna say no?

Endorsements

TW: I think people have actually forgotten why you don't want an artist to do an endorsement. Well, they couldn't get Bruce Springsteen to do a commercial, so finally one of the Cola companies said, "OK, we'll offer him his own bottling company!" They'd learned that the person with the most credibility in this country is Bruce Springsteen and they just *had* to get him.

M2: He didn't do it, right?

TW: No. He thought about it for about 10 minutes and said, "Well, no. I can't do that." And it wouldn't have worked for the soda company either. Because it's self-cancelling: if Bruce Springsteen did take that bottling company, his credibility would have fallen...

Talking Nerds

M2: This has been a pretty serious interview, considering that the Tom Tom Club really likes to be silly. You put across a kind of psychedelic playfulness, like you're busting loose after the tighter constructions of the Talking Heads.

CF: With the Talking Heads, we had some extraordinary moments,

no shit.

M2: *Really* extraordinary. I tell people that *Remain in Light* is the best album by anybody, ever.

CF: Well, I do think we got it about as good as you can get it. And therefore I don't want to ever say anything bad about that.

TW: What happens, though, is you get pushed into an image. That's the one main point that Albert Goldman made in his book on the lives of John Lennon. As much as the artist may say, "Gee. Now I can communicate my thing to all of these different people," what actually happens is that the image created by the media and the gossip and all becomes the manipulator, and the artist becomes the manipulated. Absolutely. And the public winds up directing your flow of energy *completely*. Of course, when you handle it right, that's great—that's the whole reason we perform live.

CF: That thing with the audience forms a kind of sixth sense.

TW: You can't verbalize what it is you're receiving, what you're being informed of by the audience, but somehow it gets in there and really alters your consciousness.



CF: When the Talking Heads came out of art school, we had a sense of humor. We really thought that the funniest thing in the world was to come out looking like nerdy everymen. You know, we would even talk about having the glasses with the tape, like the computer nerds over at MIT… with the loafers.

M2: Did that have to do with the fact that Byrne looked that way anyway?

TW: Absolutely. He never wore Hush Puppies, though, until it was written that he wore Hush Puppies. And then he went right out and bought some.

CF: Now, unfortunately, he's gotten into style in a serious way that I don't know…

TW: Oh, I like it. It's the grandfather look. David's very comfortable in it. It's a bit of a pantywaist thing, but it's still the funny side of David that you've really gotta love.

CF: He cares about chic a little bit too much now. There was a time where we actually created this reverse snobbery and helped to make it really cool to be uncool. And we played that to the hilt. And now in the '90s, you can pretty much be what you want to be.

Rhythm: Section, Method, Machine

GLENN HOWARD: It occurred to me that you guys are a great rhythm section and you've been married for 13 years. So maybe that's the way to get a great rhythm section.

TW: We're the only married rhythm section that I know of.

BART NAGEL: Do you use the rhythm method?

CF: Didn't work for us.

TW: Instead, I just say, "Please little spirit, don't come now." And then when we wanted to, we'd say, "Please do come." And they came. That's a better way. Chris has been my teacher. He's the musicologist of the group. They say that you can only play bass as well as the drummer drums. It's the drummer who dictates.

CF: Well, and vice-versa.

TW: Oh, I never dictate to you. The drummer's gotta do all the work, you know. That's the problem with these drum machines. You can tell the drums are *not* working with the band.

Instead I just say "Please little spirit, don't come now."

CF: Right. OK, *MONDO*s: here's the rap: computers are OK for straight dance music, but the rub is that when those people go out and try to play live, there's no dynamics. It starts off at a certain point—it might be really high. And the crowd goes, "yeah!" when they hear those first notes—but then it just hangs there on the same dynamic all night long. With live musicians, there's some kind of vibe and some kind of variation.



We sometimes make a little announcement when we start to play. We say, "By the way, ladies and gentlemen, no lip-synching whatsoever. No prerecorded tracks. We're not trying to recreate our latest MTV video up here." You know, it's funny: a lot of kids now can't differentiate between a video and a live performance. And they don't care. They go to see a replication of the video. They can't differentiate between merchandising and…

TW: Artistry.

CF: Artistry.

TW: Which is really how the cards are falling now: the merchants or the artists.

Nonstop Joy

M2: You guys are very much in the spirit of funk.

CF: Yeah. The Wild Tchoupitoulas.

TW: Love those people. That's tribal.

CF: It's nonstop joy.

TW: Well, one of the things we're trying to communicate is that it's not about some lead-singer's ego trip. This is a collaboration among men and women, getting excited together.

CF: Four men and four women.

JOEY RAMONE: Excuse me, I just gotta do some acupuncture on my foot. M

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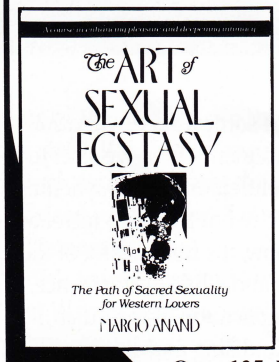


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Bitin' Off the Funk



with George Clinton

Illustration by Eric White

by Rickey Vincent

The Tales of Kidd Funkadelic *liner notes read: "George Clinton: The Nasty & Complete Minister of All Funkadelia; a scrupled heathen growth possessing the ultimate creative blasphemies & undisputed beholder of cosmic crankrot mechanics!"*

Only one man on earth can live up to that designation, the good Dr. Funkenstein himself. His mission is to spread funk to the unfunky masses of the universe.

This funk is an elusive concept, something visceral and undefined. It is a free-thinking spirit that can be touched, only if you are willing to "Give up the Funk" within. Somewhere between rock and blues, gospel and heavy metal, the funk thrives in a groove that is nasty, methodical and righteous.

George Clinton is the mastermind of an intergalactic funk movement, and leader of a musical Main Invasion Force that wreaked a reign of terror on pop music standards during the 1970s, and continues to harvest a metafoolish funky underground in the 1990s.

Clinton began as a vocalist — conking hair in Plainfield, New Jersey by day, and harmonizing with his group "The Parliaments" by night. His aborted efforts to sign the group to Berry Gordy's Motown hit machine in the mid-60's left him down and out in Detroit with nothing to do but say "Funk it!" He signed his maggot-brained rock band members to Westbound as "Funkadelic" and continued to conceive the psychedelic soul sounds of Parliament. The result was a Jeckyll & Hyde monster mash that ripped apart the standards of black music, assaulted the dreaded enemy, disco, and made you believe in the Thumpasaurus People.

Biting off acid drops of James Brown, Jimi Hendrix, and Star Trek, *Clinton dreamed up alternative realities of cloned Afronauts reclaiming the pyramids, underwater parties in Atlantis, partying in the Black Hole that began the universe ("That fuss was us!") and, of course, the Atomic Dog.*

Today Clinton's music is the most sampled of all the recent hip-hop beats, and his concepts are only now being understood. The live P. Funk experience has been referred to as "the black Grateful Dead," and the entire Funkadelic and Parliament catalogues are being released on CD, so there's no excuse for remaining unbefunked.

After 35 years in the business, George Clinton in still fresh, friendly, in good health, and ever so funky. MONDO 2000 *caught up with the irrepressible Dr. Funkenstein preparing for his first Bay Area appearance in seven years at the Fillmore. The next day, October 17, 1989, things got shaken up around the Bay and the Fillmore was closed forever. Clinton and his mob returned in November for a pair of memorable shows at the Warfield.*

—Rickey Vincent

The Samples is the Hit

GEORGE CLINTON: The samples *is* the hit. Everybody's samplin' and bitin' off the funk, but there's no emphasis put on where today's music is coming from. Before, everybody would talk about like the blues, and slavery and blah blah blah, and gospel comin' out of the lack of our own religion and stuff. And rock and roll was the outgrowth of all of that. Rock and roll was the industrial age blues. And then psychedelic is the white people's version of the same thing... you know—bustin' loose, turning the music up and jammin.' Now scratchin' and rappin', that a whole 'nother outgrowth of all of this. Rap is definitely the new funk. But they ought to start studying the basis of the rap, you know. It started out with the beat box, but now you're using samples from other groups—James Brown and ourselves in particular. I mean there's like six different songs where *One Nation Under a Groove's* been sampled.

Some of them are clever, like Public Enemy. You can't tell where they get theirs from. You have to be studying really hard to find theirs. That's the best way—the cleverest, cause it's using the sounds and not necessarily the licks. But it don't bother me if they use the whole thing. And most of 'em be paying us. De la Soul pay real good.

MONDO 2000: George, do you remember Anthony Bryant? Man, he's got a hold of a sampler and he's done some absolutely preposterous shit.

G.C.: OK. I knew it was comin.' We was testin' it when we first came out, but I guess it was a bit early, as usual. You

know, we first started doing that with him on *R&B Skeletons from the Closet*.

Like the Black Grateful Dead

M2: What's it like working with Prince?

G.C.: That was cool. You know, he was a Funkateer from a long time ago. 'Lot of people thought we just got with him, but you know he's been around since '75. He was into Bootsy.

M2: You gonna do some more together?

G.C.: Oh yeah. He's like myself, though... like, don't bust ya nut all over the place. Foreplay a little bit.

M2: You heard from Bootsy lately?

G.C.: He probably will be hookin' up with us at the beginning of the year. He didn't believe me when I said we was goin' on the road to stay. I think he believes us now. This has done got serious. We could do this forever.

M2: It's like the black Grateful Dead.

G.C.: Matter of fact that's just what they said in the *L.A. Times*. They compare the funk to the Grateful Dead. Grateful Dead and Woodstock is the babies of the industry. You can't fuck with them that easy. But they say *now* forget about the Woodstock Nation. It's the *P-Funk* nation. You can't fuck with them *at all*.

M2: Have you ever played the Fillmore?

G.C.: Nah. I think it's time for us to come in there and bring in the 90's.

Free James Brown

M2: How do you feel about the Free James Brown movement?

G.C.: I'm ready to join. I'm ready to make a couple of records, and sample his stuff and just give the whole record to whatever it is that's gonna work to free him. I think a lot of people who use the samples should think about that too.

M2: There's no way to replace James. You guys came the closest to being an authentic replication of the JB groove.

G.C.: Yeah and that's what I'm sayin'. We should do somethin' in order to try to help that situation.

Times Are-a-Changin'

M2: What was it like working with Public Enemy?

G.C.: The height of what's happening now!!! *Definitely* they're the freshest thing out there. To me they're like what Bob Dylan was to rock and roll when they were starting to talk about the condition of the world. That's Public Enemy now.

White Kids are Gettin' Really Hot

M2: How do you feel about NWA (Niggers With Attitudes) and the controversy around them?

G.C.: I think the controversy around them is stupid. I mean I ain't downin' the police, but it's like another gang saying "you sing that song, I'm gonna kick your ass." It don't start no riot.

Now the fact is that the kids are gettin' really, really hot... I'm talking about white kids! More white kids like NWA than black kids do. It says something. I don't know what. [laughs] I got a feeling it's like a reaction to that "say no" shit. I'm not saying just with drugs either. See, "No" is the greatest aphrodisiac there ever was. Somebody tell you no, you *definitely* want it then. So all this hassle they're givin' NWA is actually turning people on. I can pretty much relate to the thoughts or the feelings behind Public Enemy better than I can NWA.

Maggot Brained Again

G.C.: We tested positive for the P-Funk. I'll pee in anybody's cup. May they cup runneth over.

M2: George, is it true that you are the chosen one to deliver us the secrets of the Pyramids before the millennium?

G.C.: Yeah. Well actually, the word was passed on to me but I wasn't the chosen one, 'cause I would be the first one out there tryin' to get some pussy. See, if I'm the Chosen One, I'm not gonna have no fun, man. I'll just deliver the message. I promised somebody I'd deliver the message.

M2: Talk about the Maggot Brain concept.

G.C.: Well, we all are trying to straighten out a serious situation with faulty equipment. We have to acknowledge and understand that just like with the environment and the water and the air, our brains are polluted. So we gotta be real careful tryin' to analyze or figure out our current predicament. We gotta start off knowin' that we might make the wrong decision 'cause we're usin' faulty equipment. If we do that, then we can check and recheck our thoughts and impulses just to make sure we ain't reactin' to something that we don't know we're reactin' to. And I think that's the way we are now, in the 90's. We're Maggot Brained again. M

Bootsy didn't believe me when I said we was goin' on the road to stay. It's like the black Grateful Dead


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HOUSE MUSIC:

THE BEST TECHNO-SHAMANIC CULTURAL VIRUS SO FAR.

by Mark Heley

House music is the sound of the cultural blender running at warp speed

When the first acid house records arrived in London from Chicago, they looked as innocuous as the first rabbit probably did landing in Australia. The effects on England's club culture have been just as speedy and devastating. House music was a cultural virus that found optimum conditions: general discontent with archaic licensing laws that closed all venues at 3 AM, the shallow sterility of "youth style," and a breaking down of the traditional divisions between black, white, suburban, and cosmopolitan nightlife. But the most essential catalyst of all was the arrival of MDMA/Ecstasy/E.

Britain's music scene is still reeling in the aftershocks of that cultural meltdown three summers ago. Its influence continues to pervade every strand of popular music culture, from the E-fueled manic pop of Manchester's excellent Happy Mondays to the hard-edged pure dance music pouring out of every major city, dominating a badly depleted and wilting singles chart. In a few short summer months, a whole new underground emerged. The conservatism of the first generation to grow up under Thatcherite rule had finally melted. The ferocity and intensity of the House scene overwhelmed everyone involved. Many of the American innovators who visited refused to return home. The underground has now gone overground in a big way. "House" means big money, from fashion to advert soundtracks.

The revolution—and revolution is certainly not too strong a word — went totally unreported in the media, barely warranting a mention, even in the youth press outside of *i-D* Magazine. After-the-fact mythologizing by police and press further obscured the reality. This is particularly sad, although utterly predictable, because it masks the fact that something precious, new, and very special had emerged — in fact, nothing less than a blueprint for entertainment in the 21st Century.

The UK's 1988 "Summer of Love" created a synthesis that fused people together in a way few of them had experienced before. Acid house became the focus of a techno-shamanic ritual of deep power and purpose. For the first time, small illegal clubs like The Shoom! and RIP abandoned wholesale the alcohol-cannabis economy that dictated the slow, lethargic pace of self-conscious "cool." In sauna-hot basements and studios, unrelenting, deafening sound systems blasted only the hardest dance music under a battery of frenzied strobe lights. You were *forced* to *trance dance*. Fuelled by equal quantities of MDMA and enthusiasm, dancers staggered out after eight or ten hours of intense overwhelming sensory assault to dawn in a changed city.

By the time the spring chill had lifted, these groundbreaking prototypes had blossomed into a vast new economy. Every weekend, thousands of people in or around London would tune into pirate radio stations to learn the numbers of portable phones where they would get instructions on where to find the "rave." An incredibly efficient telecommunications network spontaneously appeared. Convoys of literally thousands of cars would form to find the way en masse to the final destination. In this way, parties with names like Sunrise & Energy

Illustration by Jo Hassall

While thousands of young people danced peacefully, reporters fantasized floors littered with "Ecstasy wrappers" and "crazed children strangling pigeons "

came together every weekend of that summer. Up to 10,000 people would travel as far as 150 miles for a party that might not start until 6AM the next morning. But one thing for certain, the party wouldn't stop until every last drop of adrenalin had been expended.

The summer's ravers were seasoned clubbers, football gangs, straight suburbanites, and hippie travellers. This unlikely congregation was unified, however briefly, in a massive underground network dedicated to utter hedonism. But unlike the youth rebellion of the 60's they all willingly returned to their day jobs. It was sociable, safe, sexy, and everyone knew it couldn't last.

The beginning of the end was signalled by the banner headlines — "Acid House Drug Orgy" — splashed across Britain's influential tabloid press. Suddenly one day, the secret was out. While thousands upon thousands of young people dancing maniacally but peacefully in a field somewhere off London's orbital motorway, reporters dutifully fantasized floors littered with "Ecstasy wrappers" and "crazed children strangling pigeons." This incoherent media frenzy soon turned into uncontrolled outrage. How could something like this go on so long and not appear on television?! So acid house, a violence-free, stupidity-free, party zone for hundreds of thousands of bored Britons, suddenly became a threat to national security. An initial burst of conciliatory talk about "licenses" and "permission" degenerated into the usual authoritarian backlash: police road-blocks, raids, and crude intimidation.

Though the authorities were powerless to stop this mighty cultural virus, the scene took on new combative undertones reminiscent of the change in hippie culture around 1968. Despite backing from the National Council for Civil Liberties, the right to free assembly was unceremoniously quashed. The "Bright Bill" (named after the MP proposing it rather than the quality of inspiration), legislation that proposes custodial sentences for anyone organizing *any* gathering of more than 500 people without receiving permission from a hostile police force, was tabled in Parliament. Amid a few minor riots and armed confrontations, the atmosphere noticeably soured and the current, fragmented phase of activity began. The originators either left for the more tolerant climes of Ibiza, Goa, or Thailand, or went into the recording studio with diverse and spectacular results that are only now appearing.

In short, the House party train went back underground. A saccharin imitation did loiter in the form of "organized" parties in antiseptic sanctioned venues that ended at 11 in the evening. But the acid spirit had long since flown.

Healthy activity continues beyond the radar of police surveillance. The parties take place well outside of London, on the South Coast and in the Midlands. The naive optimism has been transformed into a new, slightly cynical awareness. In the last two years a techno-hippified style has emerged and prospered. These are the people Fraser Clark, editor of England's *Encyclopedia Psychedelica International*, has named "zippies," an acronym for Zen-Inspired Pagan Professionals. Half hacker and half hippie, they represent a schizophrenic, but creatively charged new underground. House music forms the aural focus for a social activity wherein location, lighting effects, and the quality of pharmaceuticals are equally important components. Toss in computer-generated fractal displays, brain machines, occasional visits to shiatsu centres and sensory isolation tanks and the growing force of herbal stimulants like the Brazilian bark, "Guarana" and you've got an elegant new sensibility— part hippie, part New Age, and part New Edge.

The legacy of the "Summer of Love" lives on in a thousand British dance records, in *i-D* Magazine, the *Encyclopedia Psychedelica* offshoot, *Evolution*, in every British youth TV programme (albeit watered down), and in the British House DJs who are travelling the globe planting hybrid offshoots of the original cultural virus in cities as diverse as Melbourne and Tokyo. No one knows how these implants will mutate, but House has already taken a hold across Europe and is spreading rapidly around the world. House music, British-style, is now much more than a 120 beats-per-minute dance record. It's a blueprint for mass entertainment in a post-TV society. Even while under counter-attack from England's own media establishments, it's a mighty force that is propagating itself in a hundred diverse ways. House music is the sound of the cultural blender running at warp speed. It's a techno-shamanic dervish. But—most of all — it's been Britain's first communal altered state since the release of *Sargeant Pepper*. Shock troops will be arriving in your metropolis soon. You'll recognize them by the smiles on their faces.

THE TONKA SOUND SYSTEM provides high-quality, self metaprogramming cassettes of artfully blended house music. $10. incl. postage from TONKA, 49, Coventry Cross, Gillender St., Bromley-By-Bow, LONDON E3 3JS.

Manchester's excellent record shop, EASTERN BLOC, does a credit card mail order business on 061-832.3553. M

TUNE IN, TURN ON THE ACID HOUSE WITH PSYCHIC TV

Genesis P-Orridge & Paula P-Orridge Interview

by Philip H. Farber with Djenaba



Mechanics of Altered Consciousness

Formed in 1983 out of the ruins of two now-legendary "Industrial" bands, Throbbing Gristle and Alternative TV, Psychic TV is the product of Genesis P-Orridge's longtime obsession with the mechanics of how and why different kinds of music, light, drugs, and environments alter consciousness. As the leader of Throbbing Gristle, he more or less invented the Industrial genre, incorporating the heavy and repetitive sounds of machinery and assembly-line labor into rock 'n' roll. Presented as a sort of "anti-muzak," it was designed to call attention to—rather than soothe and mask—the stress and rhythms of the industrial world.

Over the years, P-Orridge has continued his research into rhythm, colored lights, "brain machines" like Brion Gysin's Dreamachine, sacred musics of every land, and the short but fiery history of rock 'n' roll. "Our method is Science, our aim is Religion," is how Aleister Crowley once summed it up. Magick.

Serendipity & the Acid House

A couple of years back, Genesis and his wife Paula wandered into a small record shop in Chicago and found records labelled "Acid." Thinking this referred to LSD, they bought as many as they could. But when they got home and put the disks on the turntable, they were in for a surprise. What they were listening to was

definitely not acid rock. It was house music—dance tracks from Chicago discos. "Acid," it turned out, was local slang for digital sampling — "burning" or stealing someone else's sounds. Serendipity being what it is, the rhythms in the Chicago house music—125 to 127 beats per minute—transformed Psychic TV's experiments in psychedelic sound into an incredibly powerful dance music. In the process, British Acid House was born.

New Aeon Ritual

Psychic TV still keeps the acid beat, but they've taken the form further, emphasizing live performance. Psychic TV provides an ecstatic dance environment that links the audience, the band, and the dancers to all the primal, ritual dances of the human experience. In a sense, their music is to Magick what reggae is to Rastafari. JAH = IAO. Psychic TV presents the New Aeon ritual where the sacraments are sex, drugs, and rock'n'roll.

P-Orridge asks his audiences to "Get out your voodoo and get out your acid and dance! But don't dance because it's just fun—dance into the trenches and blow away the authorities!"

Philip H. Farmer



Pleasure has become a weapon now!

On The Bus

MONDO 2000: This is the bus that your folks in Colorado [The Temple Ov Psychick Youth (TOPY), an organization founded by P-Orridge] put together for you?

GENESIS P-ORRIDGE: Yeah, touring on this bus is an incredible psychological experiment. Ten adults and two children living in here for seven weeks. Working. We often play for over three hours at the bigger gigs. And then you've got setting up and the loading out. Sometimes we'll go on at midnight, play 'til half past three and then play again that same day in another city at ten o'clock in the evening. So we're on stage for five , six hours, and then drive for twelve hours, then back on stage. It gets beyond exhaustion and into the real meaning of fatigue. Fatigue is when there's no batteries left at all. Nothing except pure Will. And that's an interesting state to be in.

Fight the Power

GP: In Oklahoma City we had an all-ages show, which I really prefer. And this 12-year-old boy came up and he was dressed in post-punk Goth (I guess) and he said that when he was six, his mom introduced him to Johnny Lydon after a PIL concert. And he said, "John Lydon was really stupid!" He said, "When I was eight, she introduced me to Billy Idol, who was shooting up in the toilet of the dressing room, and I thought, 'What an idiot!' I only like Psychic TV. They're the only band I have any respect for, because they take risks." The kid was tiny. And he asked very quietly, "Please may I come and dance on stage, because I'll get squashed in the front?" I said, "Cool, it's no problem." So he and his little friend, this girl who was also twelve, they came on stage and they danced nonstop for three and a half hours.

And then halfway through the gig, we did this drum rhythm that was improvised on the real drums, and these two mid-twenties black guys jumped on stage and started rapping, and they were really good. So, of course, I just waved them on. You know, it saved me working. They went on for about ten minutes and we were doing these Hendrix guitar things while they were rapping. The audience was joining in. The weird thing was, it never happened before, but the next three nights, black guys jumped up on stage and started rapping. All in different cities.

DJENABA: In America, it seems to me that the rhythm is the only thing that gets people out of the fog.

GP: Yeah. We've been saying that pleasure has become a weapon now. You know, confrontation just doesn't work. They know all about that game, the authorities, the conglomerates, and even the supermarkets, they know all those scams. So straight-on confrontation isn't necessarily the most effective tactic at the moment. Ironically, what used to be the most conservative thing, which was dance music, is now the most radical. And that's where the most radical ideas are being put across, and the most jarring combinations of sounds and sources as well. And we were so exhilarated to see this kind of unifying influence being done with a big smile. Everyone's smiling. And this year in Chicago, Derek Carter, who was the man who gave me my first house records in Chicago three years ago, when he was 18, jumped up on stage and did this amazing rap. He was doing stuff about Psychic TV, about the audience. And then he started to chant, "Fight the Power." And there was the whole cross-section: goths, suburbanites, hispanics, blacks—and all of them were chanting, louder and louder and louder: "Fight the Power!!!" And they're all standing like this [Gen demonstrates, standing, a fist raised in rebellion, the other hand gripping the bicep of the raised arm]. I got the mike back and I raised my fist and said, "This is not a sign of anger anymore. This is a sign of unity!" And the whole place erupted in cheering. It was beautiful. I was thinking, "If we never play again, this was worth it."

DJENABA: I think the rhythms go beyond any conscious thing, into roots and ancestry and subconscious memories...

GP: Way back to when they were in caves.

Getting the Death-Wires to Dance

PAULA P-ORRIDGE: We still occasionally get people at our shows who are sort of holdovers from Industrial music. And they don't really understand what we're doing. At least one person at each concert comes up and says, "Why aren't you doing Industrial? We travelled all the way from Ohio to listen to this." But we're going into the future, not back into the past. And we're really attracting the audience that we want, people who dance and move. And *smile*. They understand what we're saying, which is "Enjoy yourself. Be happy. Enjoy your body. Enjoy your brain and your thoughts." And what really makes me optimistic now is I see people come along and they have Throbbing Gristle tee-shirts on. And I think, "Oh No." But they start dancing and they get into it. They can understand it. I mean, there're a lot of people who will always be the death-wires, you know, black-flyers. Everything is black, industrial, and negative. I heard someone ask Gen the other day, "Why aren't you doing Industrial?" He said he was sick of playing to people who just wanted to be intellectual voyeurs.

D: The House beat takes that intellectual component away. You've got to dance. You can't stay in your head.

PP: That's right, you can't intellectualize any more.

Britishers all, PTV's current lineup consists of Genesis P-Orridge on guitar and vocals, Mistress Mix (Paula P-Orridge) handling the live mixing and some vocals, Matthew Best on drums, Fred Giannelli on guitars, and Daniel Black on Keyboards. Their latest album is Toward Thee Infinite Beat.

Information about Psychic TV and the Temple Ov Psychick Youth, as well as catalogs of albums, tee-shirts, videos, books, and other stuff, can be ordered by sending a SASE to:
TOPYUS
P.O. Box 18223
Denver, CO 80218

Muzak

The Concept of Manipulation Through Music

by
Genesis P. Orridge

The Hedonic Engineering of the Brain

As medical and biochemical knowledge increase, frequency and pulsation appear to be one of the most crucial metabolic stabilizers. The Black Box that cures drug addiction without withdrawal symptoms in 10 days relies on frequency and pulsation. Small electrodes are attached above the mastoid nerve centers behind the ears. A tiny electrical charge passes through the brain, subliminally releasing endorphine, the body's own natural opiate, which drenches the body, keeping it high. The *junk* drug is redundant and passes from the body. The endorphine prevents any withdrawal symptoms as it regulates the metabolism and hormones. So you switch from *introduced,* unnatural junk, to internally produced, natural junk, this latter being no problem to the body at all.

In Tibet, Singing Bowls, Singing Bells, Thigh Bone Trumpets and drums are used in non-logical combinations—at least to Westerners—to cure migraines, mental illness and other metabolic imbalances. The language used is different. The heads of demons are split asunder, demons are exorcised from those possessed (which could describe a junky in cold-turkey).

In New Guinea, large sacred flutes vibrate the air against itself, causing mental revelatory states and precognition. In Morocco, the *Joujouka* players use high frequency pipes and drums to reach ecstatic states and conjure up Pan and effect Magick. The Mayan civilization had strange, unexplained "oil-lamps." For a long time, these were in museums and thought of as mere trinkets. Then one day a young archaeologist happened to idly blow through one, and hit a pure, very high, pulsating note that sent him on a trip.

Everyone has observed tribal warriors whipping themselves into a trance for war, to feel no pain (that is, of course, stimulate endorphine secretion) or to produce "Magick"—to have visions, see demons, etc. A Bill Haley concert would end in frenzied vandalism. Bill Haley thought it was because his music was so fantastically good and exciting *as music*. In fact, it was a combination of mass hysteria—as in tribal dancing—and an actual drug-based metabolic explosion. Totally unconscious and uncontrolled, it was triggered by the inherent rhythms and frequencies of sound. Because he was unaware of the triggers he was dabbling in, the results were unpredictable and confused. Ironically, those right-wing journalists who condemned this "jungle music" were closer to the truth. Music does *physically* reconstruct,

Mood and crowd control is part of the work at MUZAK's Human Factors Division

engineer the brain, the body, its hormones. The entire metabolic regulator system gets tuned.

Deconditioning Through Metabolic Music

With Throbbing Gristle, we openly declared our primary interest was *metabolic* music. We applied the cut-up technique, using tape and sound, to create a non-entertainment motivated music directed at deconditioning social restraints on thought and the body. In Psychic TV we intend to apply our research and new information to building an even more precise and useful individual structure that consciously takes into account the real effects of frequency and pulse, but propagandizes them in a very deceptive and subliminal way. A distorted mirror reflecting *muzak* back on itself. An innocuous parody of style, tactic, and structure that in fact contains in code the seeds of its own destruction and hopefully the structure that nurtures it. To appear deflowered yet be totally potent.

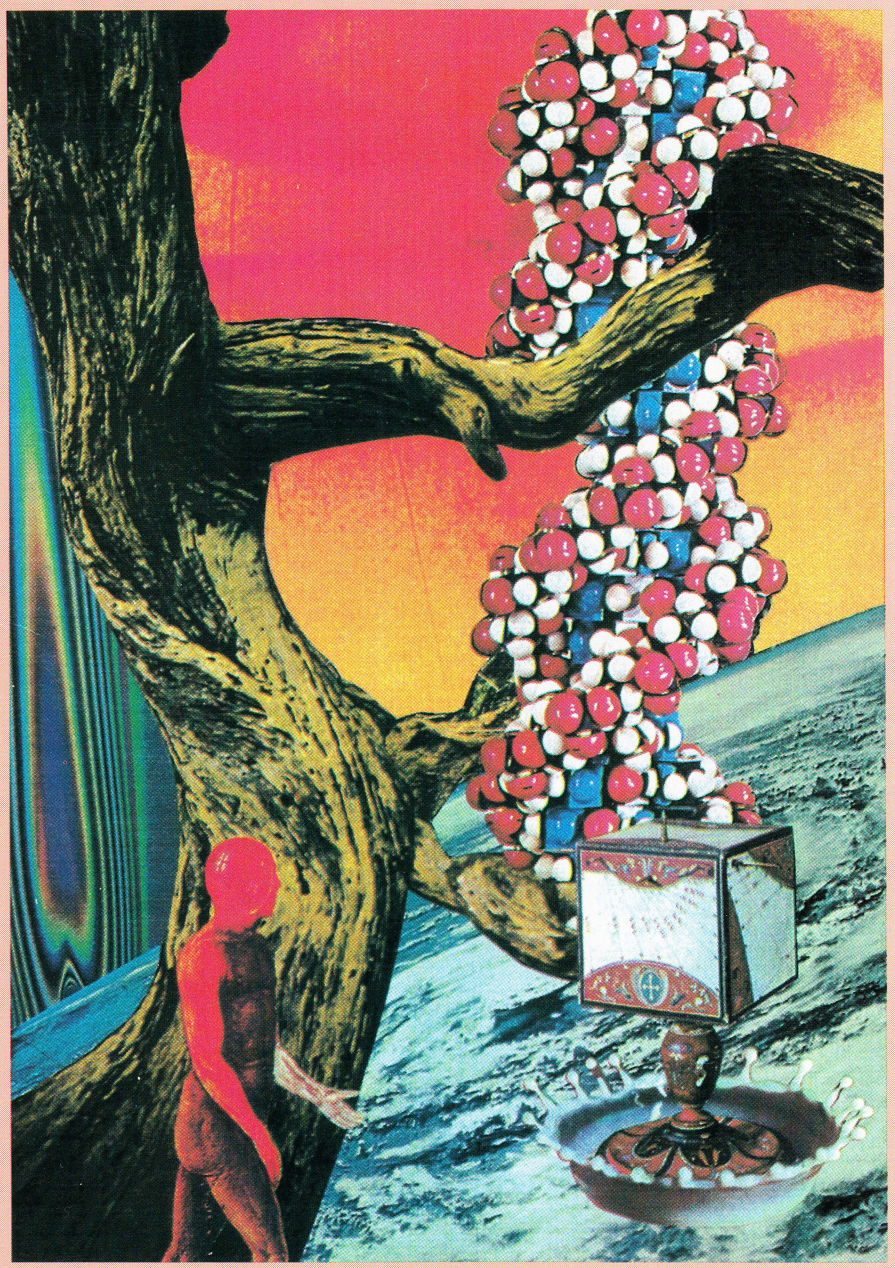


Illustration by Genesis P. Orridge

Musick: War on Muzak

PTV suggests that *musick* is like dentistry. You keep probing around until you find holes and then you fill them in until you have a complete set. *Industrial Music* was a term coined by Monte Cazazza for our early research. We openly declared we were inventing an *anti-muzak* that, instead of cushioning the sounds of a factory environment, made use of those very sounds to create rhythmic patterns and structures that incorporated the liberating effects of music by unexpected means. This approach is diametrically opposed to the position of official *muzak*, as supplied by the *Muzak Corporation of America*. Their intention is to disguise stress, to control and direct human activity in order to generate maximum productivity and minimum discontent.

A Few Words from the Muzak Corporation

(The following extracts, in italics, are derived from a book published by the *MUZAK CORPORATION* for its employees only. I was able to copy sections by nefarious means.)

Muzak is a programmed environment.

The raw material of muzak is music.

In ice-bound radar stations muzak stimulates the men who man the DEW-line, the Distant Early Warning cordon, to warn of nuclear attack.

Muzak isn't music to listen to, it is music to hear.

Muzak is functional music.

There are three main Muzak programs: Heavy Industry, Light Industry, and the Basic (or Office) Program. In each of these, 15 minutes of music, or "sound-in-motion" as we call it, is followed by 15 minutes of silence.

The ironic thing is we have no resistance in totalitarian countries.

Mood control and crowd control is part of the work of the Human Factors Division.

The irreducible minority are people who don't want or like muzak.

A muzak transmission station is a dream of 1984 automation.

If muzak makes people happy and contented in their environment, like air-conditioning and a color scheme, how can it not *be good?"*

Muzak is based on the theory of the ASCENDING CURVE, the initial observation that human efficiency is inclined to slump in mid-morning and afternoon. Wyatt and Langon established four work-curves from utter fatigue to a subtler decline that occurs when the work is distasteful and the operative is severely bored. Dan O'Neil decided this monotony and its effects would be relieved by Functional Music. That is: Boring work is made less boring by boring music.

The Total Program

Two big variables in music are Melody and Rhythm. Muzak is now hypothesizing, from observations made of hospital patients, that these may be related to the electrical activity of the nervous system. So rhythmic music may stimulate the parasympathetic system, e.g., cardiac cases seem to respond better to melodic music, peptic ulcer patients seem to respond better to rhythmic music. Muzak Corp. is researching this theory to achieve *a total program. We are not so much interested in what music we use as the sequence that will achieve results.*

The Muzak Relaxes Them as They Die

Muzak is heard rather than listened to. Although you're not necessarily conscious of it, it will still *affect* you. This process is called *Complete Ear Appeal.*

In the event of failure of our Basic Program, we do not panic. Muzak has an automatic sensing unit which will trigger a standby M4R Machine into operation after 4 minutes of Basic Program failure (i.e., no audio). The sensing unit will automatically turn on button number 3 on the M4R Machine, which is taped in a preset condition. In the advent of nuclear war, Muzak has its own power generators to ensure no failure of the Basic Program to those facilities still functioning and able to receive our transmission.

We were in a slaughterhouse recently. Apparently they were having problems. The animals' blood would clot. They say the blood flows freely now. The muzak relaxes them as they die.

Coding & Decoding

Muzak is not on prepackaged cassettes and tapes. The only records of muzak are not on sale to the public—they are for internal research only. Muzak is transmitted by telephone cable and radio. In that way a monopoly can be ensured and complete adherence to the selected program maintained.

Bear in mind therefore that the innocuous music heard in many elevators and supermarkets, offices and fast food chains, is not true Muzak. It is but a pale, unscientific reflection of the potent human engineering material.

There is no doubt that the body metabolism functions primarily via a combination of electrical frequency, pulse rates, biochemical hormones, and rhythms. The brain is dependent on input. There is no doubt that the conglomerate forces that seek to maintain control over us all, and to preserve their own vacuous position, are far more aware of these aspects than they admit. There is no doubt muzak, drugs, suppressants of metabolic stimulation, are used as weapons to ensure the stability of an oppressive status quo.

Music now must be aware of the subtleties of its effects. Its structure must take into account the metabolic and neurological effects and power of music and harness them for its own deconditioning, anarchic ends. The empty carrot of success and respect must be seen for the transparent confidence trick that it is. Drugs of addiction must be bypassed. The *real war* must begin. The decoding is possible. Our own code becomes more sophisticated and effective.

Like Tapping into the Soul of a Deep Program

Deee-Lite

These people seem to flicker. They have that adjust-the-dial look that identifies the new thing. *It's House style—jumpcuts from 60's TV to glitter to nerd with a heavy bias for paisley. The group sees itself as a preview of the global cultural synthesis: Dmitry is a Russian, Towa-Towa is Japanese, and the girl, Lady Miss Kier, who can do an uncanny imitation of a 60's Barbie doll, is some sort of American. Their new release on Elektra,* World Clique, *presents their obsession with that idea—the global East Village, made possible by desktop technologies that can now—*right now*—bypass the broadcast monopolies. In some small yet planetary village in the English countryside, a VW van beams out hours of the hypnotic, footlifting mixes known worldwide as House. Some of it was done by a 16-yr-old in Leeds, some is Czechoslovakian, and some is Deee-Lite.*

—St. Jude

LADY MISS KIER: St. Jude, huh? Do you have anything to do with the ads in the back of the *Village Voice?*

MONDO 2000: You mean where they thank me? Yeah, I do good work. Tell me how House got started in New York.

LMK: It isn't that easy. If you read interviews and articles, the history is always different, but it's kind of like House music is one continuous song.

DMITRY: It intermeshes. People say House music started in Chicago, but as things were happening in Chicago, the Paradise Garage in New York was creating the same great music. And there were DJs at the Paradise Garage who moved to Chicago.

THE MIDI SINGS ITS OWN SONG

D: What happens a lot to us, 'cause Towa and I DJ almost every night, is we pick up a new record to play and someone comes up and requests it at the same time.

M2: Divine synchronicity—that's what the *ESP* cut on your record's about.

LMK: Yeah. And we're also interested in techno-soul.

TOWA-TOWA: *MIDI*-soul.

M2: MIDI-soul!

TT: It's like you program a long MIDI number, and sometimes the MIDI channel fucks up and plays a whole new thing, *all its own.*

LMK: It's pure coincidence. It's like tapping into the soul of a deep program.

M2: *Oh holy shit..* You are *not* the people I was expecting. I mean, I saw your video last night, which is—well, Bootsy and 70's kind of psychedelic disco bubblegum, er . . .

LMK: Bubblegum? Chew it!

D: Suck on it!

M2: Heh.

LMK: A lot of people mistake House music, our Dance Music, for disco because of the tempo. But actually the whole persona of disco was escapist. Of course, there were a lot of reasons to escape.

D: ...superficial...

LMK: Yeah, it was comfortable to just go out, do cocaine, work out on the dance floor and wear designer clothes. The difference is the persona of House and modern Dance Music, including our favorite Rap, and Hip House which is a mesh of the two, and Holograph, and House Groove—

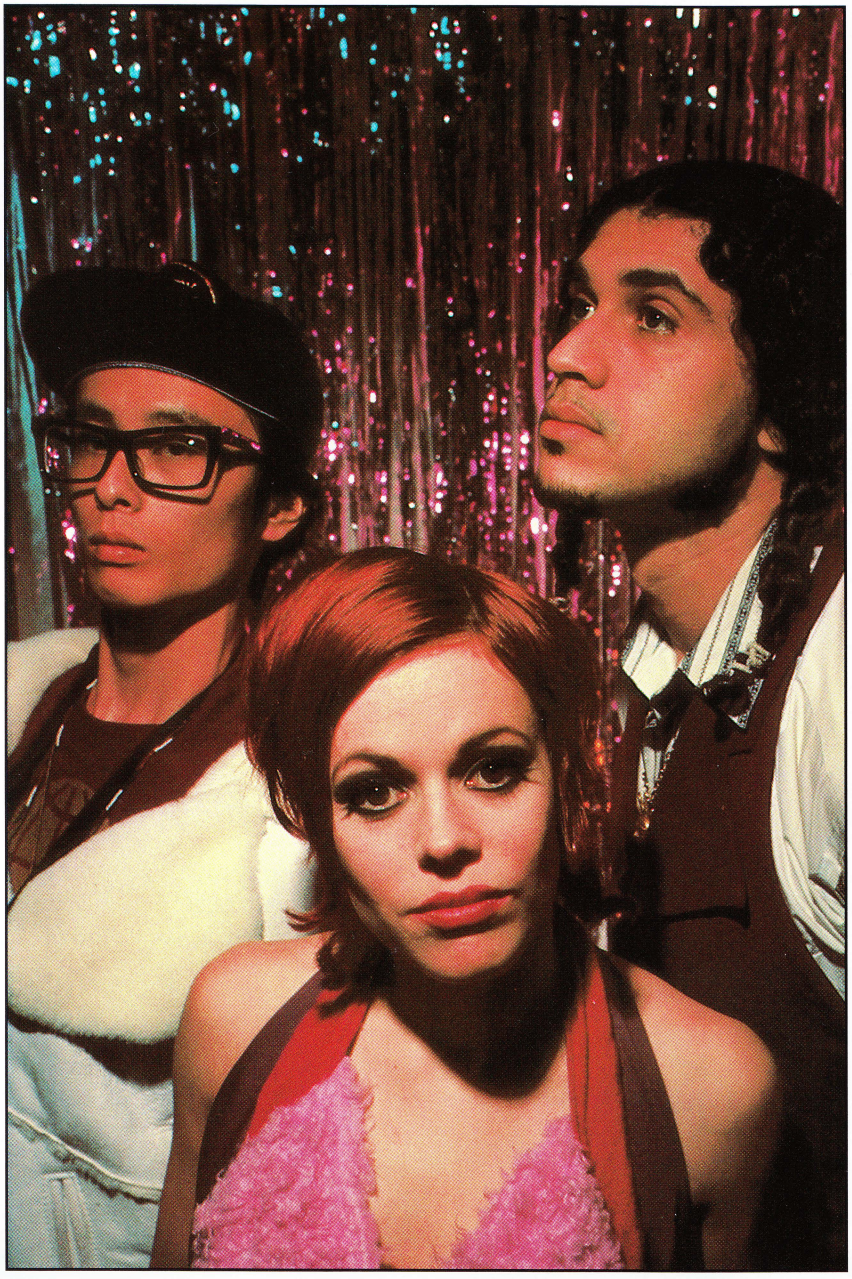
Yeah, Virtual Wigstock. Very much like drifting into Cartoon Land in broad daylight. And it doesn't *rely* on Ecstasy

which is us...
D: ... and reggae and...
LMK: ...the persona is much more humanitarian. *And if you read between the lines/Or if you skip between the beats*, there are definitely new ideas being discussed... some very specific political thoughts.

"The World is a Clique/Our Clique is the World"
D: The dance communities really embraced the new technology first because it's become cheap enough for a kid to go out and buy enough stuff to be able to produce a record in his living room.
M2: Desktop music publishing?
LMK: The ironic thing is that it isn't the college community that started on this. It came from the streets. So it was basically out of necessity. Because you know, kids had to keep up with the new sound, techno, so they just took over the technology. The majority of dance music is being written in people's living rooms, like our whole album was.
D: Everything. The production and writing, arrangement, everything was done in our living room.
LMK: We only went to the studio to record the vocals.
D: ... and some live instruments...
LMK: ...and to add a few of the sound effects. The basic thing—all the sound—was done in our house.
M2: How did you do it? You sampled and mixed, right?
TT: We have a Casio SV-1 sampler. And it has 8 tracks so you can like mix them right out if you have a mixer and a computer. We use a Macintosh.
M2: What software?
TT: Vision software. And also Alchemy; you can just change the sound...
D: The hippest of the hip software. The video was done using fractal software.
TT: And because I did a demonstration for Casio, how to use the SV-1, they gave me the sampler. I've been using that since then, since five years.
LMK: We just hope that the ethics can keep up with the technology 'cause it's so exciting what's happening with technology. And Virtual Reality is cool but it's just a tool. Soon there'll be like dream sharing. There'll be Virtual Rape. It's exciting to imagine what's not even possible yet.
M2: You're already talking about the ethical questions even before the technology is developed.
LMK: Like with sampling. I mean it's a wonderful tool, it's here to stay and it's a new instrument. But it's really up to the artists to start discussing and educating one another about the ethics. If you're going to rip off someone's hooks wholesale, then you should thank them, you should get permission, and you should pay them if they want to get paid. That's why we write all our hooks, and our samples are like less than two seconds—we just look at it as a tool to gather our sound library.
D: It's like taking a great moment from the past and putting it together with the present to create the future. Time travelling.

House as Home
M2: My London roommates described to me what it's like to be young in London in the House scene. It seems like a close community.
LMK: I don't think so anymore because the Raves are like—there's 20,000 kids.
M2: The Raves, right. But this seems to be an underground scene. They go into the clubs and trance-dance *all night*. It's a complete break in their lives, like an initiation into another culture.
LMK: Well it's beautiful to be up dancing while other people are sleeping. Great way to pick up the vibe of the collective unconscious.
M2: And this Scottish guy, when he talks about it, he gets tears in his voice. He feels like he has his own community.
LMK: Like élitist, you mean?
M2: Oh, no. He described this as like House being his real home.
LMK: 'Cause a lot of people outside the scene, in New York as well as in London, think it's a decadent and élitist scene because everybody doesn't get in the club, but what it's always meant to us is that those kids that do get in the doors, *society* shuts the door on.
D: Right. The sad thing to me is that even though all these people in England are enjoying themselves on the dance floors, it seems like they haven't done very much politically to stop the destruction of the Raves—the bills being passed making Raves illegal.
M2: Do you know people have pulled ten-year sentences for organizing Raves in London?
LMK: That's crazy.
M2: They call what's happening "The Repression." Like the anti-homosexual legislation passed there, right? I mean...
D: But those 20,000 people did not show up to demonstrate, you know? And *they* couldn't have put *all* of them away for ten years...

Raves 2000
D: It's a real trend now to have big dance floors where 2000 can all dance together and really unite. And like all cultures can meet. In New York, the best clubs are the really integrated clubs that have a mish-mash of cultures as well as people. There's The Sound Factory, The Love Machine.



Photograph by Marty Hyers

Soon there'll be like dream sharing. There'll be Virtual Rape. It's exciting to imagine what's not even possible yet

LMK: The Palladium on Friday, the Raves Night—what's it called?
D: Raves 2000. And Panty Girdle. Wigstock is a huge celebration that we've always participated in. It's a festival of like 8000 people in Tompkins Square Park run by the notorious drag queen, Lady Bunny. It's a real celebration of freedom and expression and individuality... with social awareness.
LMK: We should have a Virtual Reality program of Wigstock so everyone can experience it. Yeah, Virtual Wigstock. Very much like drifting into Cartoon Land in broad daylight. It's gorgeous. And it's basically—well, I'm not gonna say it's *drug free*, that's a little naive—but it doesn't *rely* on Ecstasy. And love is really the theme that continually comes up onstage throughout the day.

AY, MAN, GET A CONSCIENCE!

M2: You say that New York seems more communal now. Why?

LMK: Well, I think people were pushed too far. The destruction's like a slap in the face. Eight years ago there were 40,000 homeless in New York City and now the estimated number, which is always less than real, is *450,000*. In the 80's, the kids were just party kids, going to clubs. They were very apathetic. It was *trendy* to be apathetic. But now, in the 90's, with AIDS and homelessness and other problems, I think people are wanting to find out what they can do. That's why we've made it a policy to be positive in our music. We feel that we're a reflection of people beginning to look for new ideas.
We want to get Raves started in San Francisco. When we were there, a lot of the kids were looking at us and asking, "Should we move to New York?" And we were like, "you guys, you've got the most beautiful city, you have Golden Gate Park, I mean let's bring your parties into the field."
D: We did a show in San Francisco and felt that there's a lot of energy pent up that's getting ready to really burst out.
LMK: Yeah, it felt like a resurrection on the brink. M

The Primal Venting of Buttheads

A Post Punk Dialectic

The electro-visual aspects of performance – wires, microphones and speakers – gear the human body into the energy circuitry as much as an astronaut becomes the cyborg of his capsule. One performer has developed a plasticized silver space-suit into whose front pouch he inserts his guitar, which is then immediately connected to concealed circuits, the result being no wires or visible generation. But in the hands of a major musician the use of electronics can be genuinely creative.

—*Eric Mottram,* Dionysius in America

The only thing we have to do with art is that it's the last three letters in FART.

—*Gibby, singer for the Butthole Surfers*

By Antonio Lopez

Dim lights cradled by cigarette smoke. Busboys swiping beer bottles and plastic cocktail glasses from the floor. Frank Zappa and Captain Beefheart beam from overhead — cosmic signals from behind the mirror ball and the video screen. Suddenly the crash of darkness and the multiple flashes of a strobe light. Like plumes from the exploding space shuttle, fog pours from a staging area. Like a space shuttle explosion, people shuffle in expectation of a spectacle.

Two monsters emerge from the fog: one green, one red, both are naked, adorned with teddy bear heads. They hammer their painted bodies to the throbbing beat of multi-armed drummers. Shiva splits in two, kicks off the corpse of the percussionists' bodies and takes over. Through the haze, the flashing strobe disassembles projected images of car accident victims. A bullhorn wails absurd poetry; a guitar gouges out icy licks that melt into a wall of distortion.

We are at the End of Reason. The spectacle slips out of an abyss and slaps us like the crazy woman in the Minnesota shopping mall who massacres a bunch of kids with an M-16. Or the Vietnam Vet with the bumper sticker that reads "I'm not deaf, I'm just ignoring you" who enters McDonalds with an Uzi, shouting "I'll take you to 'Nam" while emptying clips of Israeli ammunition into Big Mac consumers. Or the guy in Philly who captured prostitutes and fed them dog food while he buried them in shit. Consensus reality cracked.

All information should be considered false until proven true.
—*Clausowitz*

Photo-illustration by Gibby



Shiva splits in two... flashing strobe disassembles projected images of car accident victims. A bullhorn wails absurd poetry. We are at the End of Reason

From driver's ed. car accident film clips to a scene of a penis being severed by a doctor's knife to *Death Race 2000*, the spectator at a live Butthole Surfers show *should* feel assaulted. But the crowd has already been whipped into a hedonistic frenzy of tribal and sexual dance. Slam dancing introduced mild violence into this 90's-style jitterbug, but it's mere roughhousing. The real violence is in the culture that spawned it.

The Buttholes employ humor and irony to demystify power and deal with horror (and I'll assume that most *MONDO* readers agree that consensus reality represents a kind of horror.) Cultural icons from Charlie's Angels to the generic rockstar are dis-and-reassembled. Their album titles are dada poetry *(Locust Abortion Technician, Rembrandt Pussy Horse,* and *Hairway to Steven)* while lyrics to songs like "Booze, Tobacco, Dope, Pussy, Cars" dissect and reflect American culture. Underlying this "cultural critique" —and I don't believe it's a fully conscious critique, the band members are merely following their aesthetic intuition—is pure tribal rock 'n' roll energy. After all, people don't go to live concerts to philosophize. They want to have fun. Which is what makes the whole thing so subversive. In being consumed by the tribal energies, the spectator ceases to be a passive observer and becomes an active participant in a ritualistic setting. The hammering of distorted guitar, psychotic vocals, and pulsating drum creates a group trance that disrupts the spectator-consumer mass media trance for a moment (two hours of geological time). The result? A primitive bonding.

Anomalies are outlaws that escape the jails of consensus reality.

—Michael Grosso

A Butthole Surfers show should be seen in the larger context. The increasing intensity of amplified music has roughly paralleled the expansion of atomic energy and the arms race. The defection from mainstream society into the folds of the counter-cultures ebbs and flows, but with each new cycle the music gets louder and faster. And at its core, rock music has been a refuge for tribalistic and spiritual fulfillment for alienates in the West.

Immediately post-WWII, you had the likes of John Lee Hooker—radically distorted guitar work for its time. Then, into Eisenhower's calm, post-war consumer Eden, a rowdy erotic noise called rock 'n' roll—a louder, faster version of the blues—exploded straight into the heart of teenage America. But alas, through payola and corporate influence, the Pat Boones took over and bland consumer capitalism won the day.

Then the children of the 50's became the radicals of the 60's. The music got louder, the drugs got stronger, the alienation of white kids from "the system" got deeper and a counterculture grew. Bands like the Grateful Dead built huge followings based on an alternative lifestyle of drugs (altered states) and nomadism: a new tribalism, a surrogate religion.

On to the latter 70's, where punk and new wave appeared superficially to be a rejection of "Aquarian" age values. Punk mutated rock into a visually and aurally *violent* assault on Anglo Saxon society, thus serving as a mirror of historical violence. No longer could young people be expected to accept the status quo politely. Themes like "No Future" reflected the negationist sensibilities of modern youth, stretching rock into a still louder and faster frontier and serving to countervail the near-pervasive right wing conservatism.

The disenchantment with the 60's was easy enough to grasp. Look at what we got: Ronald Reagan, yuppies, urban sprawl and ecological apocalypse. Where was the revolution? To the casual observer on the punk scene, rock music symbolized the failures of our mentors. Punk, in this sense, had the political trappings of the 60's but rejected the tribalistic elements of 60's rock music. Its very premise was (and is) that punk is not rock, it's "fuck you" music and God is dead anyway, right? It was like waking up with a bad acid hangover from a decade that—as far as they knew—never really happened. They were just born then... that's all.

But in the final analysis, punk *was* rock in a functionalist sense. It fulfilled the need of a generation in the same way that the blues served the blacks, or the various mutations of rock had served other generations. Punk was merely the blues for faster, more fragmented times. So now we've come full circle, and I think the phenomenon of the Butthole Surfers attests to this. The Buttheads came out of the closet, shedding some of the "political correctness" of punk, to embrace the unconscious of pop culture and—while they're at it—reshuffle the whole reality deck and redeal.

So the Butthole Surfers should be seen as a reflection of the mood underlying the spectacle reality of the 90's. As it is with all generations, some kind of cultural shamanism is needed to fuse the primitive urges of people to dance with the cosmos, celebrate the chaos of apocalypse and make love with the spirit of the Earth. All this while dissecting whatever consensus reality had been manufactured by the dream factory (Hollywood) and the reality workers of the media. Whether it's the Theater of the Absurd, Dada, Be Bop and Beat poetry, psychedelia, be-ins, rap, punk or the Butthole Surfers, industrialized tribes who are keyed into the mysterious way of the universe will be driven to create their own rituals and their own means to find a parking space in the garage of absurdity. M

Butthole Hacker

We talk to Gibby, mostly about his computer graphics.

Interviewed by Bart Nagel & R. U. Sirius



Photo-illustration by Gibby

Coulda Been a Programmer

MONDO 2000: What computer do you work on and what kind of stuff are you doing?

GIBBY: Well, I've got an IBM-style 386 with an 8-Meg RAM and a 32-bit video card. And I'm running some key frame animation modeling programs. And I've got a paint program as well that I use.

M2: What kind of imagery are you doing?

G: Oh, I like to do things that you can only do on a computer. Computer models that mutate off of outside photographs. A lot of my stuff can best be described as looking like Jamaican space stations.

I do a lot of texture mapping, so I use a lot of photographs. And then I always find uses that weren't intended, generally to interesting effect. That's really the key, I think. Most computer graphics seem really similar... like obvious ways to respond to the capabilities of the machine. But there *are* plenty of people doing interesting things. The worthwhile stuff usually goes beyond the intentions of the programmer who wrote the software they're using. I'm kind of limited because I can't program, but I seem to have a better imagination than most people I've met who are programmers. It's a shame I didn't learn programming but I don't know... maybe I lost a few too many left brain cells!

M2: I think that when you program, the *right* side of your brain rots. So what are you going to send us?

G: What I can do with photographs that's really neat—especially portraits—I have an image that looks like it was shot with a bumpy lens, if you will. Different focal lengths that go across the whole thing so it stretches and bends. You can create some really weird, pinheady lookin' people. It's really strange.

M2: I think God's already done that one.

I Told You So

M2: A lot of computer graphics that you see involve people playing with mathematical formulas and coming up with interesting—I guess—symmetrical patterns and stuff like that, which don't do anything for me art-wise.

G: Yeah, it's kinda hard to find the people who really do wildly different stuff. It's usually a woman or an Asian person that does the interesting things. And I don't know why but they're always in some place like

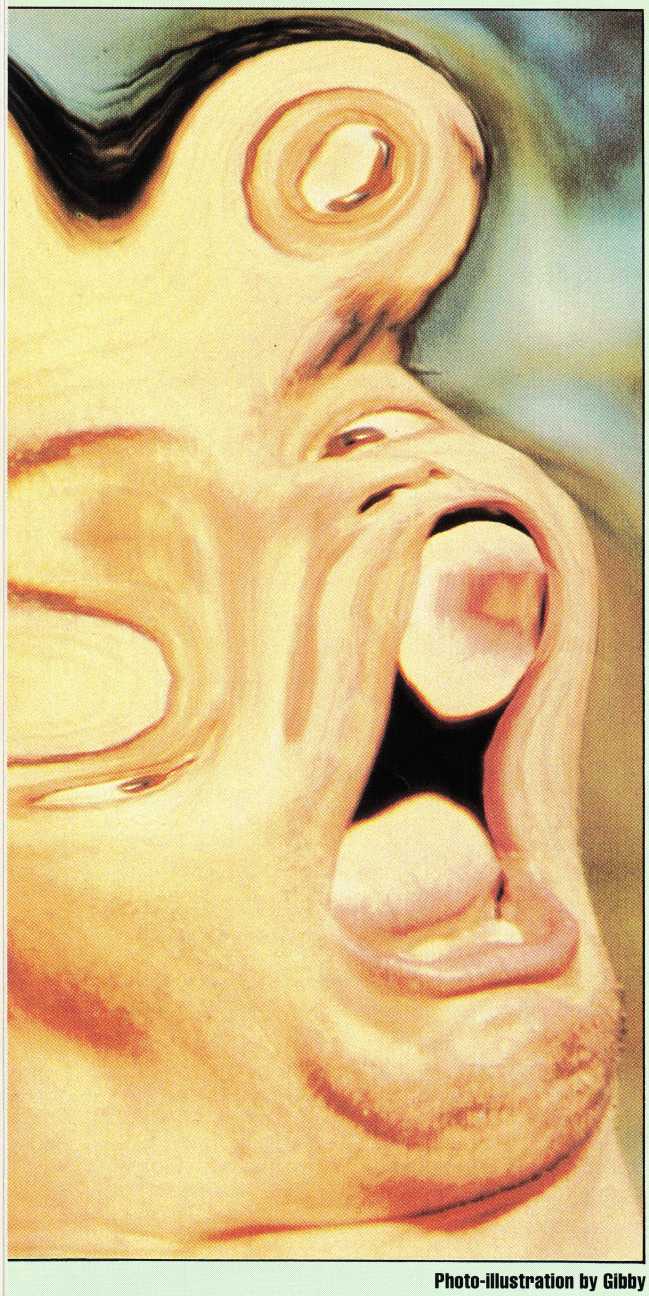


Photo-illustration by Gibby

Ohio. Weird.

M2: Well doesn't Ohio mean "hello" in Japanese?

G: You haven't asked the title of our next record! It's basically unpronounceable. It's a word that's kinda like *keogeeuh*. Pronounce it "Keo-gee-eeh."

R. U. SIRIUS: And what's the spelling of it?

G: I don't know.

M2: Isn't that one of those Russian pastries?

G: Actually it's Navajo code talk for "I told you so." [general laughter] It's kinda funny. The Navajos used this language for their own communication in WWII. It's not a written language, but a spoken thing. So when what you've got is a non-phonetic pronunciation of a non-written language, I think things are pretty questionable. But it seems like the record company's buying it. We're gonna have a lot of computer effects on our video for the next record. But you know they'll never play it on...

M2: We're talking MTV?

G: Well there's a lot of other things you can do with a video, like get it played all over Europe. Actually, MTV *does* play us but they always want something that's funny. You know, it's gotta be funny. I don't know why. It's just this weird group of people — actually a pretty nice, friendly group of people at MTV—but it's like *they* know what the kids want. And they don't want anything too weird or too heavy or too questioning. Anyway, that seems like a general thing with us. The sorta day-glo people like us for the yucks.

M2: So are the portions of your video that aren't going to be computer generated being shot on film or videotape?

G: We're gonna shoot it on super-8 and 16 and dump it down to videotape, and frame-by-frame capture it into the system and then fuck with it—we'll rotoscope (or texture-map) one video frame onto an object and then let it metamorph, if you will. So we'll texture map with a stream of files.

M2: Have you seen the video *Roy Orbison and his Friends?* It was a video that they shot down in L.A. where it's got all of these...

G: This was black and white, right?

M2: Yeah.

G: Yeah, yeah. With like Tom Waits playing completely random, off-key notes and giving everybody dirty looks?

M2: Yeah. I thought that was quite an incredible video actually. They used a lot of 8mm combined with...

G: They probably shot it with 35mm, then used a $50,000 machine to make it look that way.

M2: Right (laughter). Yeah!

G: And they like had a control with different knobs you could turn to different kinds of super-8 cameras. And then you could select from different kinds of fuck ups.

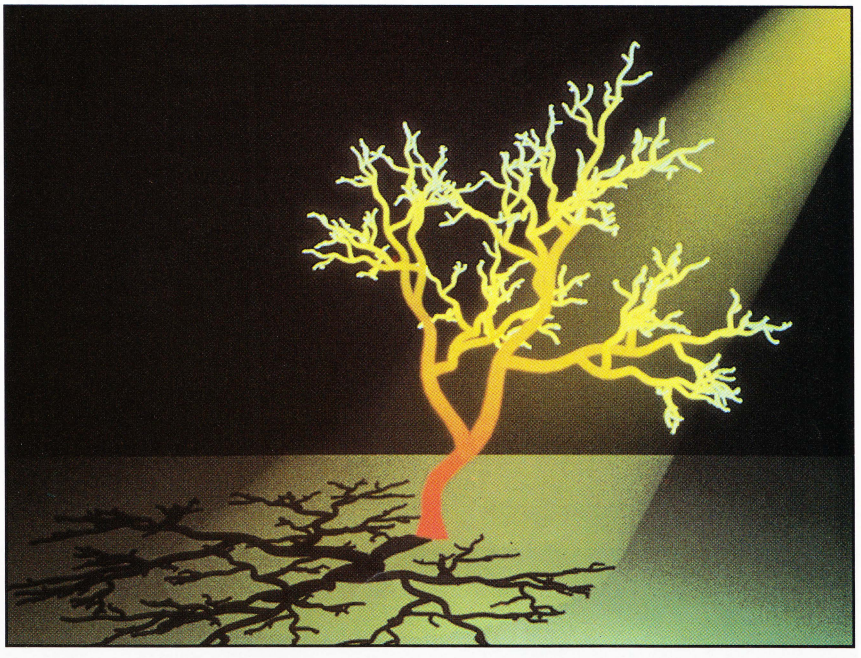
Assassinating Presidents to Impress People

M2: So who's gonna be inspiring the music of the 90's? And who's inspiring you?

G: Well, I don't know. I was really embarrassed by the jumpsuit that I had in the disco era that was too short in the crotch for me so I just had to do something else. I imagine that Andy Gibbs'll inspire the 90's. Personally, I've always been really inspired by Sarah Jane Moore. She was the first woman who tried to assassinate President Ford. And she's cool because she was the rich housewife of a successful plastic surgeon in the Bay Area who was also hanging out with the radical left. And she tried to narc on members of the SLA who she was also hanging out with. When she did that, her name was immediately mud in the radical community in the Bay Area, so to make up for it, it she tried to kill Ford. [laughter]. She missed but she's pretty dang interesting, methinks. Somebody who's really tried to make something of her life. M

Taking Toys from the Boys

Rebecca Allen in conversation with Jas. Morgan



High atop the Lookout Tower of the Hyatt Regency, Rebecca Allen and I are drinking Cabernet as we look down into the desolate financial district of Dallas. This is a curious town, almost no sign of physical life on the enormously wide streets—not even the odd pizza delivery or policeman. The Texans are now indulging a fascination with green and white neon, which outlines an increasing number of downtown's post-modern steel & mirrored glass architecture.

It's the last of five very active days and nights of SIGGRAPH '90. We're exhausted and trying to wind down a bit before a final night of parties [You know, where all the real *information is exchanged]. Our waitress inquires about our needs for a second drink—"Can ah git y'all a li'l more whine?" We're quick to accept this Southern hospitality.*

Rebecca took a BFA from Rhode Island School of Design in 1975. She became part of the Architecture Machine Group at MIT [it later became the Media Lab], and was instrumental in the production of the first interactive videodisc projects including the Aspen Movie Map *and* Personalized Movies. *This was followed by a six-year stint as Designer, Director and Researcher at the Computer Graphics Laboratory at New York Institute of Technology (NYIT). In 1982 she won an Emmy Award for her computer animated title sequence for the CBS series* Walter Cronkite's Universe.

Rebecca's fascination with human movement has produced some of the most detailed examples of computer-generated human motion, as exemplified by her work in Twyla Tharpe's dance video production, The Catherine Wheel, *which also featured music by David Byrne. She also created an animated work,* STEPS, *as part of a project with the Joffrey Ballet company.*

Other impressive credentials include designing and directing all visual material for the album Electric Cafe *by the German techno-pop group, Kraftwerk. This projects' music video,* Musique Non Stop, *garnered the 1987 Nicograph Award for "Artistic and Technical Excellence" and was nominated for "Best Special Effects" by the National Academy of Video Arts and Sciences.* BEHAVE, *with music by Peter Gabriel, is the first example of computer animation and live action combined on the new HDTV [High Definition Television] format.*

Rebecca is a very attractive, cooly composed woman who at the sight of my microcassette confesses, "Well, I'm not very good with words." We laugh for a moment, and begin.

Jas. Morgan

Hot Times at MIT

MONDO 2000: Did you have an early affinity for machines?

REBECCA ALLEN: I was always good in things like math and technical stuff, but not so good that I wanted to become somebody who did that sort of thing. But while hanging out at MIT and living at the lab, I just decided that I had to learn everything I could. I couldn't just be some flaky artist. So I really tried to learn programming. Radio Shack books about computers, that's how I started! And I talked and talked to the guys. Since I was the only girl there, they just loved it. MIT had just started a graduate program, so I applied there. I think they let me in basically because I was a fixture in the lab. So with no technical background, I got into MIT. I didn't even have to take a test! And I was there with Negroponte's Architecture Machine Group for three years. That was a really hot time for MIT. Scott Fisher (Virtual Reality Pioneer formerly with NASA) was there, as was Mike

It's not like I'm out saving the world. I mean, I do music videos!

I liked having a computer model of a human represent a saint, because saints are superhuman

Naimark (Media Lab, Apple Multimedia Lab). I was the only woman in a group of 60 at Arch Mac, which was the predecessor of Media Lab.

M2: Did you get the "girls don't know how to play with machines" attitude at all?

RA: There was an inkling of that, but that's an old-fashioned attitude even among the hardcore nerds, I think. My whole nerd apprenticeship was refreshing for me, as a woman. There wasn't too much awareness of male or female. My behavior was different, working with these asexual guys, because I didn't have to play the usual games to get what I wanted. All they could see was technical expertise and if you had that, you were OK. If you didn't, you were an outcast no matter what you looked like. This is the most powerful thing going on in our society and it's being done by these asocial types. They're perfectly nice guys for the most part but there's a lack of awareness of human interplay. Art looked totally different to me after all that. It needed the *relationship between humans and machines*.

The Catherine Wheel

Twyla Tharp looked me up. She'd done this piece on Broadway called *The Catherine Wheel*—David Byrne did the music—and she was gonna do a video version of it. We worked out this choreographed section where I had the computer model—who represented St. Catherine—as a performer in the piece. It sort of freaked people out, like: "Oh, machines are replacing humans." But I liked having a computer model of a human represent a saint, because saints are superhuman. There's the same kind of fear and awe for saints that there is for computers.

I liked the idea of working with choreographers because they're getting humans to move where they want, and I'm trying to get the computer-model human to move where *I* want. But I also always try to remind people that there's something special about human experiences and human people that we can't simulate. I presented a piece at SIGGRAPH '87 in San Francisco that involved live sweaty bodies moving around the stage along with the animation to bring that home.

M2: With Kraftwerk, you reversed that. No musicians, just machines.

RA: Yeah. They have this whole peculiar German sense of humor that some people don't get. And since they're not using guitars . . . when you play a keyboard, this is really all you do [*she moves her hands up and down*]. It's like typing. So they realized, "Well, we don't even have to be on stage. We hardly move anyway." So they had these mannequin heads made. And when they'd sing, "We are the robots," they'd put the heads onstage and leave —they'd be out in the audience watching or something.



For the *Musique Non Stop* video, they sent me their mannequin heads and I went through this horribly elaborate process of putting them into the computer. Then I animated them and brought them to life. I did the video, the album cover and all the press photos. The guys wouldn't let any realistic photographic images of themselves out—they'd only send out computer versions. The press hated that.

But they [Kraftwerk] were just regular guys. For its time, the video was radical. I mean, they

played with us. People would see them and get afraid 'cos they thought they were these strict German types, but the whole thing was a put on.

Spending a lot of time with musicians was interesting because there was always the cry from their lovers that *everything* was the band . . . day and night, which was just like with us computer graphics people. We knew we were creating images that had never been created before—working out formulas for modeling life that had never been thought of before and it was all-encompassing.

Behave!

I did this video called *BEHAVE* to Peter Gabriel's *We Do What We're Told (milgram's 37)* using this great software that Craig Reynolds of Symbolics had done on behavioral modeling. And I did a piece with his software rendered on HDTV. This behavioral modeling is really at the forefront of Artificial Life. And it raises some interesting questions. They say "We'll model *behaviors*." And the question arises: "So what are you gonna do, model a violent computer animated figure?"

Do you remember Milgram's Study? That's what Gabriel's referring to in the song. These behavioral scientists found that their test subjects would press a button that they believed was inflicting pain on a victim to the point where the victim was screaming—because an authority figure was telling them to. So before you start making behavioral software, let's get a new psychology going. Or are they gonna encode that same behavior—violent, obedient people who would drop a nuclear bomb? That'll be encoded in these software programs and personified through these computers.

So I do this work to give us new reflections of ourselves. And I take it as a personal mission to have it feed back into something that's gonna improve the human condition. It's not like I'm out saving the world. I mean, I do music videos! But I try to ask questions in them and I avoid the typical stereotypes. My videos don't have the girls in leather and boys with guns—guitars and masturbation! It's like, *all right already!*

Anyway, with this *BEHAVE* piece, I worked with amateur deaf actors, because my interest is in aspects of communication that don't rely on words. This is why VR hits me in such a powerful way.

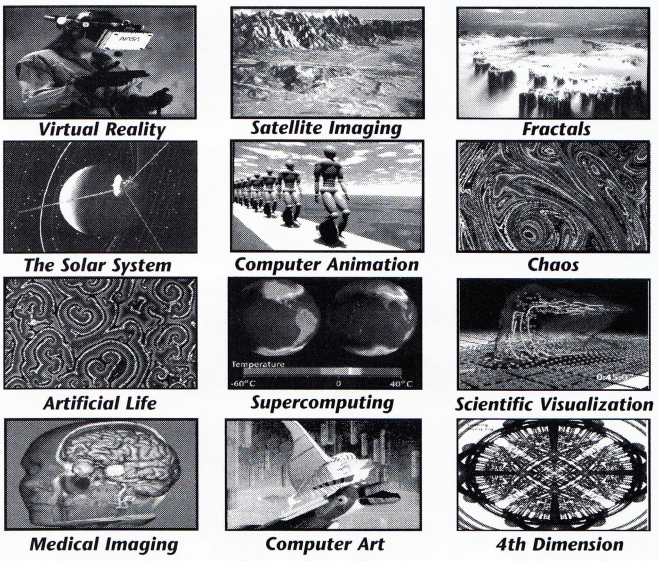
The House of Sin

RA: A lot of people are anxious to get rid of the body, jack directly into the brain. Too many people see the body as the house of sin. These technical guys really aren't comfortable with this whole concept of bodies. I feel like we're just starting to touch the surface of how to relate as these things that we are, these bodies, human bodies and the whole complexity of male and female relationships. Science had tried to pretend that the brain is here and the body and emotions are somewhere else, so we never have to touch or deal with all these complicated emotional senses. We can keep them separate.

M2: [Spock-like] "These emotions just confuse perfect science and logic and the intellect."

RA: I think you *are* a robot if you aren't dealing with your body and your emotions. And that's how I've worked with the human body. It's like, even in computer animation, put in the *body* . Put the human body in there, using the cylinders and cones. M

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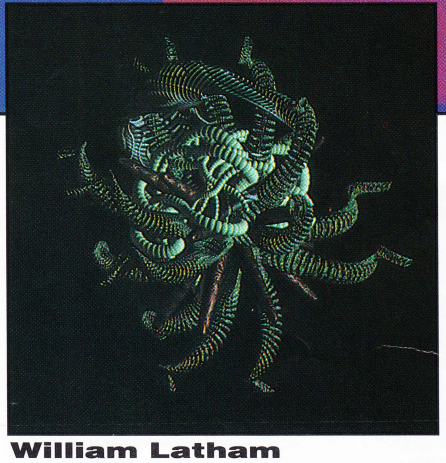
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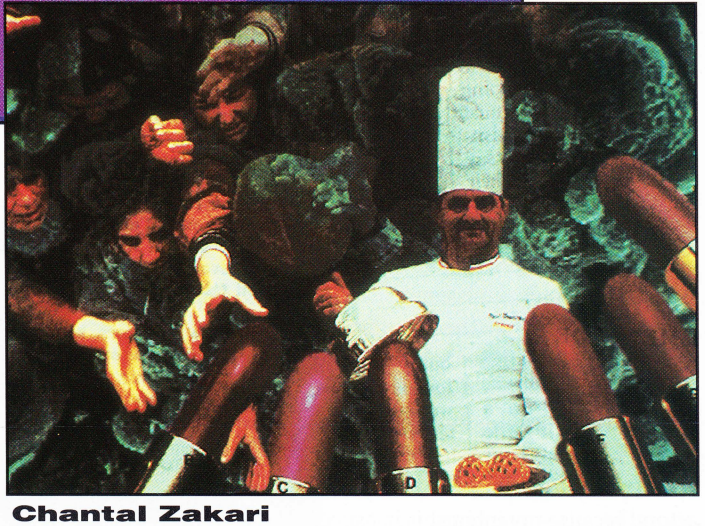
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SIGGRAPH '90 Gallery: *The Wizards of Light & Motion*

Collected by Jas. Morgan & Christopher Case

Patrice Gelband and Eric Gullichsen of Sense8 offered a bit of advice last July as I became more vocal about attending my first SIGGRAPH conference: "There's so much *more* to it than that, Jas., you won't be able to *speak* for three days after."

ACM SIGGRAPH [Association for Computing Machinery Special Interest Group on Computer Graphics] has been gathering electronic-graphics artists and technologists in major U.S. venues since 1974. Each year more and more graphic artists come together to present highly-stylized visual realizations and exchange ideas. This is where you'll find the pop stars of the 90's and beyond. Plumping the lexicon of emerging visual language, computer graphics artists are now composing previously impossible digital images and near-photorealistic 3-D environments.

Everybody at SIGGRAPH '90 in Dallas seemed amazingly open and high-spirited, considering the oppressive 90°+ Texas heat. For five days, I witnessed and experienced the thrilling meld of wisdom, technology, alcohol, humor, and abandon that my friends from Sense8 had warned me about. And as their works demonstrate, this brilliant and accomplished community remains on-the-go, inventing and exploring a little bit further each time out.

Yoichiro Kawaguchi's morphogenetic algorithms—inspired by his



Kathleen Kirka



Johann Jascha

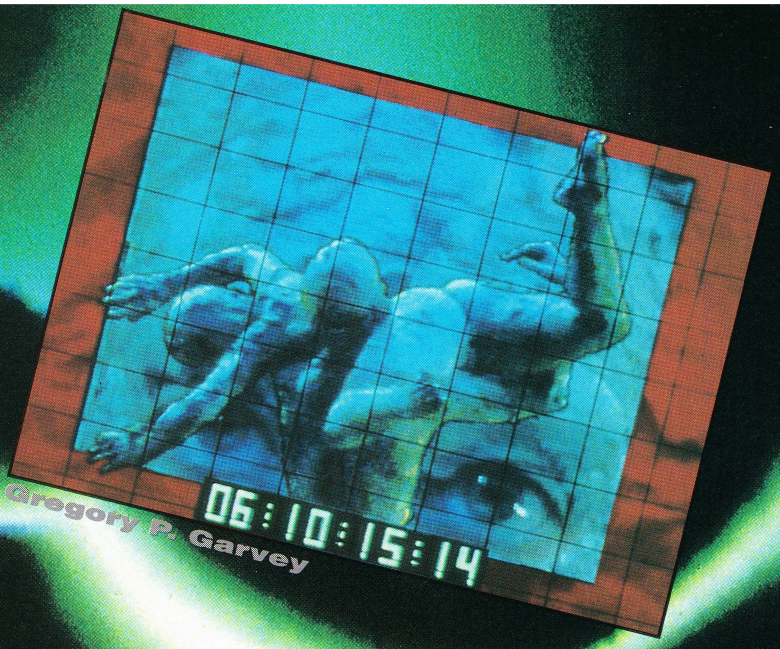


Thomas Plazibat

beloved Japanese marine worlds first encountered in childhood— splashes across an enormous theater screen as he and his wife ladle Saké from a giant wooden cask into the cups of some five hundred onlookers, all staring in hushed amazement. At "Digital Image-Digital Photography," the Art Show for still images, Alvy Ray Smith premiers his latest word in photorealism, while Richard W. Maile updates Botticelli's *The Birth of Venus* as *The Birth of Elvis*—by inserting a *Fun in Acapulco* image of the King, in white swim trunks, on the halfshell. "Hip, Hype and Hope," the VR panel with Warren Robinette, William Bricken, Jaron Lanier, Esther Dyson, Timothy Leary, and John Barlow, featured some unexpected histrionics—with chairman Bob Jacobson pushed off his microphone by an incensed Myron Krueger (author of the seminal *Artificial Reality* and performance director of *VideoPlace)*, who was determined to let his early 70's credits be known.

However exciting it is to see wickedly fast and powerful computer systems being pushed to their limits, technology at SIGGRAPH exists in the shadows of the wizards of light and motion who utilize it. Here then is the finest use of *MONDO 2000* techno-colour I can imagine: a gallery of "painting-in-light" by the artists of SIGGRAPH '90.

Jas. Morgan M



Gregory P. Garvey



Bruce Lindbloom



Erol Otus

Background Images on
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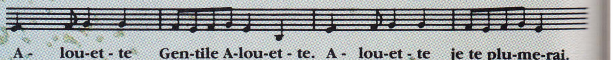
> "American managers with language skills open more doors."
> *Wall Street Journal Editorial*
> July 25, 1988

Left Brain	Right Brain
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> "(the superlearning method is) fascinating . . . the results are extraordinary."
> Prof. Lawrence Hall
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> *The New York Times*
> September 5, 1988

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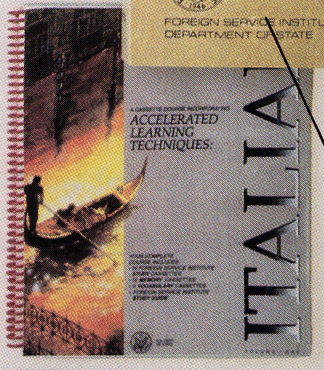
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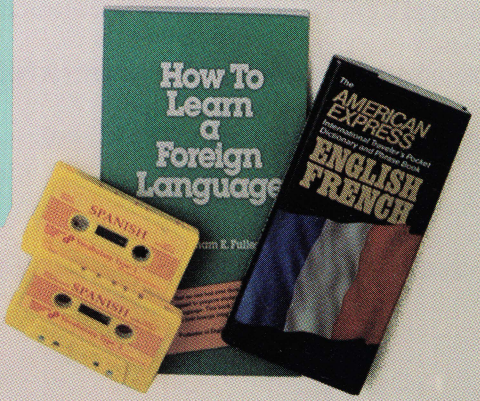
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Chaos & Catastrophe

An Interview with Ralph Abraham

Watch two bits of foam flowing side by side at the bottom of a waterfall. What can you guess about how close they were at the top? Nothing. As far as standard physics is concerned, God might just as well have taken all those water molecules under the table and shuffled them personally. Traditionally, when physicists saw complex results, they looked for complex causes. When they saw a random relationship between what goes into a system and what comes out, they assumed that they would have to build randomness into any realistic theory, by artificially adding noise and error. The modern study of chaos began with the creeping realization in the 1960's that quite simple mathematical equations could model systems every bit as violent as a waterfall. Tiny differences in input could quickly become overwhelming differences in output. In weather, for example, this translates into what is only half-jokingly known as the Butterfly Effect — the notion that a butterfly stirring the air today in Peking can transform storm systems next month in New York.

From *Chaos: the Making of a New Science* by James Gleick

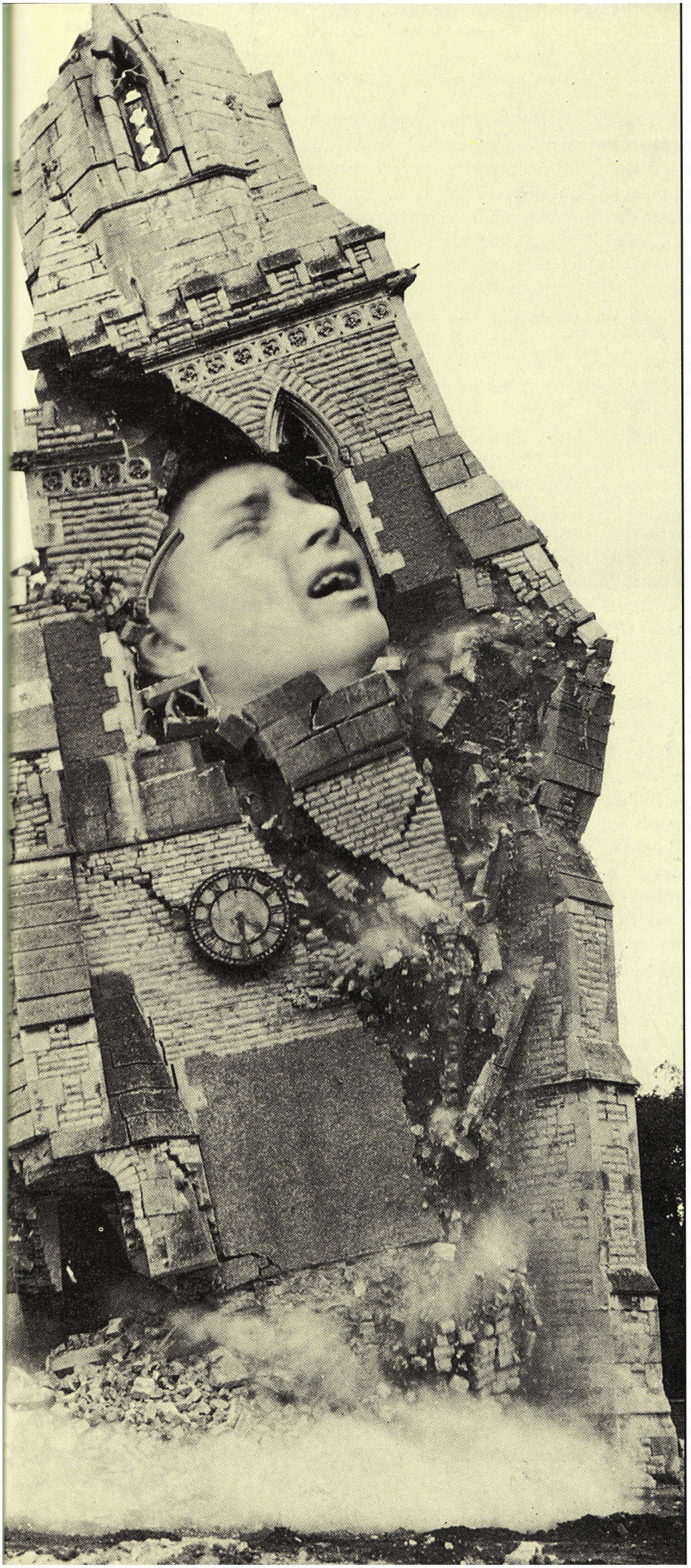
Ralph Abraham's Santa Cruz-based chaos cabal became legend with the publication of James Gleick's popular book Chaos: The Making of a New Science. *His Dynamical Systems approach was viewed as a "dangerous mind parasite" by both the physics and mathematics departments at UC Santa Cruz.*

Nowadays chaos, dynamical systems, and fractal geometry are all the rage. The trendy British rock and fashion magazine i D *headlines "Chaos Culture," while fractal videos and computer programs are the psychedelic light shows of the '90s. In the midst of all this, Abraham continues to spelunk along the edge—for instance, developing MIMI (Mathematically Illuminated Musical Instrument), a digital-video based instrument.*

Abraham earned his doctorate in mathematics at the University of Michigan in 1960. He taught at UC Berkeley, Columbia, and Princeton Universities before moving to Santa Cruz in 1968. In addition, he has held visiting positions overseas in Amsterdam, Paris, and Warwick. In 1975 he founded the Visual Mathematics project at UC Santa Cruz to explore the use of interactive computer graphics in teaching mathematics. He's been a professional gambler (see The Eudaemonic Pie *by Thomas Bass, Vintage, 1986) , a psychedelic explorer, and a cave-dwelling seeker in India.*

Ralph has authored dozens of books including the highly successful three volume set, Dynamics: the Geometry of Behavior. *He continues to live and teach in Santa Cruz, where he is collaborating on a book about the "archaic revival" with Rupert Sheldrake and Terence McKenna.*

Illustration by John Borruso



The Orphic Trinity: Chaos, Gaia and Eros

by Rebecca McClen & David Jay Brown

REBECCA McCLEN: The principles of chaos theory and other mathematical ideas appear to echo in the myths and philosophies of some ancient cultures—the Greeks had a goddess of Chaos, for example, and the *I Ching* is full of references to such ideas. What level of understanding do you think earlier civilizations had of these concepts and how was this expressed?

RALPH ABRAHAM: Well, the repression of chaos began with the patriarchal takeover six thousand years ago. So to look at an example of a high culture accepting chaos as part of their mythological pantheon and in their arts and behavior, one has to go back before that takeover. And the most common example of such a culture is Minoan Crete. This culture was excavated by Sir Arthur Evans, and his reconstruction of the temples and religion, etc., have since been seriously questioned by archaeologists. In short, there was a controversy as to what were their arts, their social patterns, and so on.

A lot of things are known through mythology that are traced back to Crete. There were the Bacchic mysteries, derived from the Orphic, the Dionysian and so on. Following this backwards, like tracing roots or Ariadne's thread, you come to a certain mythic kernel which would be associated with Minoan Crete. I wouldn't say these are expressions of chaos. They might be, but there are so many differences between our culture and the Cretan culture. We know something about Dionysian ritual; the importance of music in ritual, the dichotomy of religious ritual into two types... outdoors on the open plain and indoors in a cave. Gaia points to the planet as an organism, and the plain as its surface. Gaia is very chaotic. If you reject chaos, you reject Gaia. The Orphic trinity is Chaos, Gaia, and Eros.

That's what I suggest you think about. Gaia as the Earth, the love of the planet, the integrity of life-forms; Chaos as the essence of life—more chaos is healthier; Eros as human behavior in resonance with Chaos and Gaia. It's rumored that the Minoans had a very high degree of bisexual activity, licentious behavior and wild parties. This may be the quality of the genders in a partnership society as described by Riane Eisler.

RM: Why do you think later Western Culture tended to view chaos as an undesirable quality in nature?

RA: Well, that's a very big question, and speculation can't be taken too seriously, but I think that this has to do primarily with the patriarchal takeover. The repression of Chaos, Gaia and Eros is characteristic of the patriarchal paradigm, which turned out to be dominant in our recent history. And it seems likely that sexual repression is the

The wiring diagram will provide a global model of the geosphere

key.

Human society is an evolving system—including its psyche, its mythology, its cultural structure. This evolution is punctuated by bifurcations, mutations caused by the planetary equivalent of lightning—comets. Comets were probably very important in the history of consciousness... they still are. There are some mutations where changes are made in the memes, the cultural genetic structure. Then there's a kind of natural selection that goes on when two societies are in conflict over a common goal, and in this conflict one would be selected not just by military strength but also through the stability of its social structure.

In the long run, there are evolutionary dead ends. A lot of species become extinct just because they're the wrong idea to begin with. It seems likely that the human species is the wrong idea to begin with and may not succeed in having a stable, long-lived civilization on this planet. We know that Egyptian society lasted three thousand years. That's a fine record for a human society. Well, we're up to one thousand years since the Renaissance. We'll see how long this goes on. I'm not placing any bets. Clearly, there are some structural flaws that are endangering the future of human habitation on this planet. The planet is in symbiosis with the human infection. This could be a very good symbiosis; it could mediate some sort of divine plan on a cosmic scale with the actual material of planet Earth... which, of course, includes the consciousness of the human species.

Anyway, the chaos societies had moon festivals... as did we, in the Sixties. This is no coincidence, because the Sixties, the Italian Renaissance, the renaissance of the troubadours in the twelfth century, early Christianity, the Pythagorean Academy at Crotona—all these have in common a temporary resurgence of Orphic ideals followed by massive and violent repression by the conservative society. These have generally been historical foci for burning people at the stake. Of all the forms of terrorism, burning people at the stake seemed to be the most appropriate for patriarchal societies to use in repressing revivals involving the goddess. In the 60's, we got a fleeting experience what life was like in Minoan Crete, in the Garden of Eden. We had moon festivals and people abandoned themselves to their feelings, to Chaos, to Gaia, to Eros. The groups that experienced this Garden of Eden broke up. The 60's came to an end. And a number of break-ups revolved around patriarchal sexual jealousy.

Many Circuits of this Hermeneutic Circle

RM: The scientific trend towards reductionism led quantum physicists to the realization that the whole does not equal the sum of its parts. Now chaos theory seems to clarify this statement by saying that this is because we can't know the sum of all the parts. What do you think are the implications of this idea in how we may arrange and organize information in the future?

RA: Aaaah. You're touching on the reason I say that chaos theory isn't very important, except as a kind of double negative, whereas dynamical systems theory offers something very important indeed. We need to understand whole systems, and whole systems can't be understood by reduction—though the terrific gains in understanding made by the reductionist scientist will have a role to play in understanding whole systems. The reduced understanding of the biochemistry of the adrenal cortex, for example will be synthesized into models of whole systems, such as the stress response and the immune system. The technology for modeling whole systems is on the frontier of science at the moment. It's the crucial frontier for solving our crisis.

Dynamical systems theory, specifically the branch called complex dynamics, offers a strategy for the re-synthesizing of fractionalized scientific knowledge and an understanding of complex whole systems. Complex systems theory has replaced chaos theory on the fashion pages of the science newspapers. And I don't think this fascination with complex systems theory is going to be a short-lived flash-in-the-pan. This is the real thing. Our challenge now is the reintegration of the sciences, after their dissolution in the Renaissance, into an understanding of whole systems, particularly planetary systems—the hydrosphere, the lithosphere, the atmosphere, the biosphere and the noösphere. Within the lower spheres, the new direction is called global modeling. Global modeling tries to put together reductionist models people have made of the oceans, of atmospheric phenomena, and of solar radiation and synthesize them into one global model. This global synthesis requires two things. First of all, it needs models for the separate components, or organs, of the planetary system to be linked into a common strategy where they can relate to each other. Secondly, it requires a wiring diagram—how to put them together. In the field of global modeling, a tremendous synthesis is now taking place, things like conferences on the wiring diagram that will provide a global model of the geosphere.

For the sociosphere, we have to start from scratch. We don't have many specialists producing mathematical models for society yet but there are a few pioneering first steps. There are, for example, the archaeologists and anthropologists worrying about the demise of the

Mayan civilization in Central America in the Fifteenth and Sixteenth Centuries. As they got into it, it was so complex and there were so many hypotheses, that they tried to resolve it by building mathematical models. There are now a number of competing complex dynamical models for the Mayan society, taking into account the food chain, the weather, the population, and the distance between ceremonial centers. All these factors are built into competing models. They run them and try to see which one has the best relationship to the archaeological data. So a model system is being created.

As these global models become more successful, global social modeling will begin. Then individual components have to be modeled; political and economic systems of individual nations, their interactions, and so on. They have to be made into a common strategy so they can be connected together. And then one has to extrapolate from the Mayan models and gain wiring diagrams for the different component parts, including psychological and medical factors. In the reductionist physical sciences, we will only have to connect existing components together, following a diagram, to get to global models. But for the social sciences, we'll have to start from scratch. We're going to have to make models for the organs, do experiments in simulation with various wiring diagrams, compare them with data, improve the component models etc. Only after many circuits of this hermeneutical circle might we create a global social model. *Then* the global planet model and the global social model have to be connected together. There's also the mythological and the spiritual dimension and the understanding of the world of the unconscious. So the whole thing will have to take place once again in the noösphere and then *that* has to be connected up. Eventually, we hope to get some kind of model for understanding the effects of choices we might make upon our long-range future. This may never happen, but if it did, mathematics would be of use to Gaia in creating the future through direct, conscious interaction with the evolutionary process. This seems to be our challenge.

Psychedelic Vibes & Resonances

DAVID BROWN: Have your experiences with psychedelics had any influence on your mathematical perspective and research?

RA: Well, yes. I guess my experiences with psychedelics influenced everything. There was a period of six or seven years that included psychedelics, traveling in Europe, sleeping in the street, traveling to India and living in a cave, and so on—these were all part of what I call my "walkabout." It was between my first, more prosaic period of mathematical work and all that has followed in the past fifteen years. This was my hippie period, this spectacular experience of the G.R. wave, or the gylanic revival (after Riane Eisler) of the 60's.

I think my emphasis on vibrations and resonance is one thing that resulted from my walkabout. Another thing was that I became more concerned with the application of mathematics to the important problems of the human world. I felt, and continue to feel, that this planet is *really sick*. There are serious problems, and if mathematics doesn't have anything to do with these problems, perhaps it isn't worth doing. One should do something else. So I thought vigorously after that period about something I had not even thought about before... the relationship of the research to the problems of the world. That became an obsession.

DB: Why do you think the infinitely-receding geometrically-organized visual patterns seen by people under the influence of psychedelics so resemble computer-generated fractal images?

RA: Well, I don't know if they *do*, really. There's an interesting theory of the geometric forms in psychedelic hallucinations based on mathematics by Jack Cowen and Bard Ermentrout. It has to do with patterns of biochemical activity in the visual cortex and is governed by a certain model related to neural nets. This model has geometric patterns in spacetime, dynamical patterns, which are patterns that any structure of that kind would have. So these two mathematicians see psychedelic hallucinations as mathematical forms inherent in the structure of the physical brain. Now I'm not convinced by that, but I think it's kind of an unassailable position. One can't just argue it away on the basis of one's personal experience. What I think about psychedelic visuals is not so different, except that I wouldn't locate them in the physical brain. I think that we perceive, through some kind of resonance phenomenon, patterns from another sphere of existence that is also governed by a certain mathematical structure which gives it the form that we see. I can't speak for everyone, but in my experience, this form moves. And the mathematicians of fractal geometry have made movies and—to me—they don't *move* right. So I think that the resemblance between fractals and psychedelic visuals is very superficial.

I think that the resemblance between fractals and psychedelic visuals is very superficial

Chaotic Attractors & Catastrophic Change

RM: In chaos theory, when an attractor disappears due to sudden catastrophic change, the system becomes structureless and experiences a term of "transient chaos" before another attractor is found. How have you applied this idea to cultural transformations?

RA: Well, that's actually a commonly expressed idea that might turn out to be unfounded. People—including me—would like to use an aspect of dynamical systems theory called bifurcation theory to model bifurcations in history. But as we've looked more closely, we've found that the transient is probably not transient chaos but is transient something else.

Did you know that heart physiology shows more chaos in the healthy heart than in the sick heart? So it's dangerous to take the casual implications of the ideas in chaos theory and try to fit them into some preconceived perception of external reality. A better idea is to get some data and try to construct a model. There's no lack of numerical data about social and historical process. For example, the total weight of mail sent in mail bags from the American Embassy in Russia to Washington, D.C. is known for over a century. Political scientists have an enormous amount of data. I think the serious applications of mathematical modeling to the political and social process will proceed in the numerical realm. The result might not fit any preconceptions based on an intuitive understanding of these chaos concepts. I don't know if social change is going to be characterized by chaos or not.

Chaos: It's Not Scary at All

DB: From chaos theory, we know that small errors in calculation can grow exponentially in time, making long-term prediction difficult. With this in mind, do you think it's possible to foresee what life for humanity will be like in the 21st Century?

RA: This idea of the exponential divergence, the so-called sensitive dependence on initial conditions, is very much misunderstood. When a process follows a trajectory on a chaotic attractor, and you start two processes from fairly close initial conditions, they do indeed diverge for a while. But—in point of fact—what is happening is that both of the trajectories go 'round and 'round. You can think of yarn being wound on a skein. They diverge for awhile, but pretty soon they reach the edge of the skein and they fold into the middle again. They have a certain maximum separation, it might be four inches or something, and that's it. They do not diverge indefinitely and go off into infinity. That's exactly what *doesn't* happen with chaotic attractors. So chaotic attractors ought to be very reassuring to people who would otherwise have anxiety about chaos. Because the chaos in a chaotic attractor is very bounded and the degree to which things go haywire is extremely limited. So that's the good news. Chaos is very much the same as the steady state. It's not that scary at all.

Now if our evolutionary path were modeled by a chaotic attractor, then we could answer the question of where we'd be in the twenty-first century. We'd be pretty much in the same mess as now. But it's not. A better kind of mathematical object for modeling evolutionary processes is a bifurcation diagram. In this context, a chaotic attractor is changing in time. There may be bifurcations—for example, a catastrophe, a comet or something. Who knows? And it may be that some bifurcations can occur under the action of parameters that are controlled by us... how much energy we use, how much waste we make, etc. That's why bifurcation diagrams are more interesting than chaotic attractors for modeling our own process. Under this more general kind of model, we cannot say where we will be in the Twenty-First Century. Or *if* we'll be.



Mathematica Author Stephen Wolfram and Physics Genius Saul-Paul Sirag in Conversation

by Jas. Morgan & Efrem Lipkin
Assisted by John Zaitz, George Gleason & Jeff Mark

I would like to put mathematics into the gyre of cognitive mapping: past, present and future. Our CCM (cultural cognitive map) includes libraries—the libraries of the Platonic Academy, the Alexandrian Museum, the University of Bologna, and so on. Historically, mathematics has served to progressively enlarge our vocabulary. While not its main function, this is a practical aspect of mathematics: *applied mathematics*, the favorite mathematics of Pythagoras, Plato and so on. Applied mathematics extends language for the purpose of thinking, talking, and writing about processes, complex systems, and chaotic behavior. Particularly CDS (or the field of complex dynamical systems) gives us the tools to construct cognitive maps that really work in a practical way, to give us an edge, an advantage, in our own evolution. At the present moment we have arrived at the *chaos revolution*, in which a new understanding of chaotic systems is giving us the capability for the first time to make adequate maps of systems on a larger scale of complexity, such as our biosphere, or whole social systems.

Now suppose that mathematics (including the theories of dynamical systems, chaos, bifurcation, complex dynamical systems, and erodynamics), the computer revolution, and the art of making models of complex systems, were all applied to the whole complex system in which we now live. Suppose we make use of all these wondrous miracles for the purpose of *making our own "preference cone complex" visible*. This would be a giant step forward in the evolution of consciousness in the Gaian mind. Through this enhanced self-consciousness we may find a way to align our preference cone systems for a global increase of social synergy, realizing the high synergy configuration which is the necessary pre-condition for future evolution.

—Ralph Abraham

Quantum Randiness

First Tuesday night of three at the "Hyperspace Tutorial." The International Transpersonal Society hosts a classroom filled with some 20 mathheads, a chalkboard and, almost incidentally, Saul-Paul Sirag, the man described by Faster than Light *author Nick Herbert as the most far-out thinker in quantum physics. "Only three other people in the world can understand Saul-Paul," Nick is fond of saying about his longtime friend, "and I'm not one of them."*

These mathheads were hardcore; personal hygiene often exchanged for deeper theoretical understandings of fiber bundles and nested catastrophes. Saul-Paul Sirag's insight: reality as "bubble" within hyperspace. rendered into chalkstream hieroglyphics, is occasionally met with scattered "Ahhh!'s" of successful communication. For almost two hours, quantum realities danced in green 2–space before me and, just as often, spun beyond me. I remained entranced.

Suddenly, Doktor Sirag produced a Rudy Rucker monograph and, pointing first to it and then to his blackboard said, "This cover illustration is this." *The room gasped as one participant system. Shades of the old* Tennessee Tuxedo *cartoons! What he needed, it seemed to me, was Mr. Whoopie's 3-Dimensional Blackboard, so he could write in a formula and have it visually manifest itself.*

Jump cut: Hacker's Convention Party at the Exploratorium. Armed with but a couple of party invites, a gaggle of MONDOIDS *slip serenely in through the side door to dip chips and schmooze. Big deal. But there's Stephen Wolfram, the programming genius who created* Mathematica.

Ahhh, Stephen Wolfram. Certified self-educated physics genius. Wolfram formally entered the computer biz with Mathematica, *a software program that runs on everything from Macs to mainframes. For anybody doing any sort of mathematics on computer,* Mathematica *is a dream come true. (See Eric Gullichsen's review, issue #6 of* Reality Hackers*) Wolfram also has to his credit pioneering works in the field of cellular automata, having collaborated with no less than Richard Feynman in examining the subject. Clearly a man to be conjured with. And a man to put together with Saul-Paul Sirag.*

The moment finally presents itself at the Hotel Sofitel for the Mathematica 1990 Conference. Wearing my Spacetime cadet beanie with tech support from legendary hacker Efrem Lipkin, we call an ad hoc summit meeting in the Hotel's fern bar. Drinks ordered, the pearlcorder rolls.

Jas. Morgan

STEPHEN WOLFRAM: I started off doing particle physics. I got into that about '74. I wrote my first physics paper in '75. I particularly liked the kinds of particle physics where there was some way of relating what was going on to experiments and such like.

Then I got interested in quantum field theory and cosmology. So I ended up working on problems around the kinds of physics that happened in the early universe. I was spending a lot of time doing algebra and decided life would be simpler if I could get a computer to do that. Around 1980, I got into making a computer to do algebra and spent a year or two developing the system called SMP. Then I spent a little while



Illustration by Wolfgang Gersch

algebra and spent a year or two developing the system called SMP. Then I spent a little while learning about starting a company. That was a company with a very different character than this one because it was all venture-funded.

After that I got interested in complex systems and trying to understand how complex behavior arises in a variety of systems in physics and biology. And the most remarkable thing that I guess I discovered is that you can have very simple underlying rules and generate from those very complicated behavior. Cellular automata, of course, is the best example of that phenomenon. But the phenomenon really changes one's intuition about what the philosophical theories of biology and other areas should be because often we've been looking at very complex behavior and assumed that the theory that underlies what's going on must itself be very complex. Cellular automata show us that's not true.

In the last few months I've been getting back to working on complexity and trying to understand what the basic origins of that are. [Animated] And actually as it happens . . . as it happens I've been thinking about quantum mechanics!

SAUL PAUL SIRAG: Aha!

SW: When I think about it, I realize how little I understand about it. I was sad that the only person I ever knew who really understood anything much at all about quantum mechanics was Dick Feynman. And I used to talk to him a lot about it . . . I actually have kind of a bizarre perspective on it. See, the fundamental problem in quantum mechanics, the problem that's been highlighted, is the *measurement problem*.

"What is the measurement problem?" you may ask. Well, standard quantum mechanics is fundamentally a probabalistic theory. How do we reconcile that with what we consciously perceive—which is the fact that there are definite things that happen? When you try and analyze quantum mechanics, you start trying to see what actually goes on when the quantum measurement is made. And what people have been doing with some small quantum systems is amplifying the effects of that system to a point where you get into a measure of voltage or something like that, just so you can have a measurement. And that's a lot of what's going on in quantum mechanics and quantum measurement theory. But that leaves us with the amplification process. Nobody has a really good model for that amplification process. Nobody has a good model for the device that's making quantum measurement and essentially turning this small quantum effect into a large classical phenomenon.

SPS: Do you think that complexity theory is going to provide a way of approaching this amplification?

SW: It's crucial! It's absolutely crucial! It's like thermodynamics. What happens in a quantum measurement is like thermodynamics . . . by virtue of this whole sequence of events that have to happen. It's irreversible, even though it's not *fundamentally* irreversible because quantum mechanics is fundamentally a reversible theory. But it's *effectively* irreversible in the way that thermodynamics is effectively irreversible. My own guess is that the way to understand quantum measurement is to make models of measuring devices that are very

much like models of quantum computers.

An interesting question is, "Can we produce true randomness with quantum mechanics?" Like, I'd really find it interesting to have a randomness chip that I could plug into my computer and clock some lines on the chip and out of it you get this completely random sequence. Physical, perfect randomness, no psuedo-random stuff. The question is: "can you build such a chip?" And the answer, I think, is probably not. Feynman and I spent some time trying to analyze this problem.

When people were first trying to make tables of random numbers, the RAND Corporation put out this huge table of random numbers, right?

SPS: They turned out not to be random.

SW: Right. They had these vacuum tubes . . . The problem was they were taking data too quickly. Every millisecond they were getting another bit out...and there wasn't time for all this sort of space charge to diffuse away and for things to be random again.

In fact what fought them was a certain kind of noise that's now been studied in solid-state systems which messed up their sampling. So one of the things one learns about these chips is there's a limit to the speed at which you can get randomness out. Where is the randomness coming from when something like that (i.e. the noise) contributes? It's coming from thermodynamic effects: from heat, essentially. And in order to have a lot of randomness, what you have to end up with is a "randomness antenna" that comes out of your computer and is sensitive to all the cues in your environment, and picks up all these fluctuations in the environment. Because the thermal conductivity of these things has only some finite value; the speed at which heat diffuses into the region in which you're doing amplification-making measurements is finite.

SPS: So even though the underlying quantum structure is truly random, you can't get that out with an amplification device?

SW: Right. In fact, my suspicion is that in order to get it out, your amplification device has to be a universal computer.

SPS: So you're working on it, it sounds like.

SW: I've been thinking about this again recently. Here's the problem that I really want to solve right now. I want to find a quantum mechanical analog of cellular automata. Cellular automata are kind of a caricature of classical physics. I want to find the quantum analog of that.

SPS: One of the ideas that's been around recently is that one might be able to model quantum randomness through chaos, but that hasn't worked so far as I know.

SW: Well, I think traditional chaos theory is not as deep as it should be. Traditional chaos theory mostly concentrates on initial conditions . . . which is not the true origin of randomness in most systems. It's much more like the pseudo-random number generation or encryption kind of computation that I've studied in cellular automata.

But the question of whether at an underlying level there's some kind of chaotic dynamical system that's producing quantum behavior . . . I think that's true. And I think one of the reasons that people don't see it is because they spend time thinking about quantum mechanics, but not about quantum field theory . . . and thinking about quantum mechanics is kind of like thinking about particle mechanics rather than thinking about classical fields. In cellular automata, it's a lot easier to see the model of classical fields than it is to see the model of particle mechanics. So I've really been concentrating on quantum field theory rather than quantum mechanics to get an analog of cellular automata for quantum field theory. But it's really hard, because the formulation of this kind of thing comes through path integrals and I've been trying to understand clearly how path integrals work, and I think I understand how path integrals for quantum mechanics work. There's a lot to be said about this!

The formulation of quantum mechanics that's probably the clearest is the path integral formulation. It's interesting because in statistical mechanics the idea of the path integral is that you can work out the probabilities for things by considering all the possible paths of evolution of those things—weighted with a certain factor—and then add up the weightings for all the paths that get you to the state you want to look at, and see what probabilities you get.

It turns out there's an interpretation of the path integral in statistical mechanics that allows you to think about it in terms of an ensemble of deterministic systems that are just doing their evolution. And then you get the probabilities by averaging over this ensemble of systems.

SPS: How many systems?

SW: In quantum mechanics, the question is, "Can you get the probabilities by averaging over a bunch of different things?" And nobody knows how to do that. All that's known in quantum mechanics is how to get the probabilities as a mathematical matter by looking at this path integral. So the question becomes: "Is there, in fact, a deterministic kind of computer procedure for finding those probabilities other than this purely mathematical procedure involving probabilistic path integrals?" So I haven't got the quantum analog for cellular automata *yet*.

EFREM LIPKIN: You sum the probabilities and then average

I want to find a quantum mechanical analog of cellular automata

ıplitude.

The thing is you don't sum the *probabilities*, you sum the *probability amplitudes*. And Feynman claims that that's where all the mystery is.

SW: As a matter of fact, Feynman once showed me how to do everything using probabilities rather than amplitudes. The only thing you have to have in order to do that is *negative probabilities*.

SPS: Right, right, right.

EL: One attack on understanding automata that I've been interested in is stochastic automata. There you have an *excuse* for probability. You say that, in the system, the number of states is conserved—minimized in some way—then you just pull back naturally into a stochastic system.

SW: I don't know about that. I don't believe in intrinsically stochastic systems! In studying cellular automata, I've noticed that any model where people said, "This is a probabilities model!", it turns out two things are true. First of all, they go ahead and simulate it on a computer with a pseudo-random generator and it turns out it doesn't really matter how good their psuedo-random generator is. In fact, usually I manage to find cellular automata versions of these models — but where the cellular automata generated quite enough randomness to do the "stochastic things that they wanted," and yet there was no stochasticity in the model.

My conclusion is that the probabilities version isn't a good idea to try because you may not want to spend the time to get more mathematically sophisticated.

SPS: It sounds like you're looking for a quasi-deterministic model of quantum field theory?

SW: Yes . . . maybe I'm crazy! But if I find it, it'll be incredibly neat because we'll be able to actually do all of quantum physics on a computer.

SPS: One of the interesting things to me about some of the developments in unified field theory is that it has a very classical feel to it. You essentially quantize at the very last instance, so to speak. You do everything as classically as possible.

SW: Well, string theory certainly has that character.

SPS: Yeah! Exactly.

SW: Yes, I think everybody's gotten very hooked on this whole Bell's inequality thing. And my guess is that when you understand things in a quantum field theory context rather than in this kind of specially idealized quantum mechanics context, it'll all be fairly clear. It's fairly clear how you get out of Bell's inequality theorem—basically you have to go to some effort to prepare independent experiments and so on. And there is a causal connection between what happens in those different experiments because, as you set up the experiment, there's no way you can do it without having had some communication between the different experimental devices.

SPS: . . . that there's some sort of connection going on. Now you might find *this* interesting. There is one possible loophole which some people have worried about, and that is that the two sides aren't changed in a random way, they're changed . . .

SW: In a pre-programmed way.

SPS: Pre-programmed, completely. Some people have suggested that maybe the correlation somehow gets embedded as an artifact by that process, in and of itself.

SW: I think as soon as one has a computer, one has to get a lot more sophisticated about the possible kinds of experiments one thinks of doing. One example that's kind of cute is the twin paradox in relativity. When you say, "Well there's these two rockets" . . . *[he thinks for a moment]* How 'bout if the clocks you have (onboard the rockets) are connected to accelerometers, and the way the clocks work is they measure time, and they also look at the results of the accelerometer, and they put all those through a computer and then they back-correct for the acceleration that the clock has experienced. So at the end, the clock actually reads the correct time independent of that acceleration. So you get something that basically seems to violate . . . well, if you could get through it so that it doesn't violate the principles of relativity . . . but that's kind of missed the point.

SW: You know, the non-trivial question that arises there is: "If you have, for example, a biological organism — does it behave like this clock that has an accelerometer attached or does it behave like a pendulum clock that's structured?"

EL: You've read my mind.

SW: I don't think the answer's completely obvious. And I think when you start having computers involved as measuring devices, you have to be a lot more careful. M

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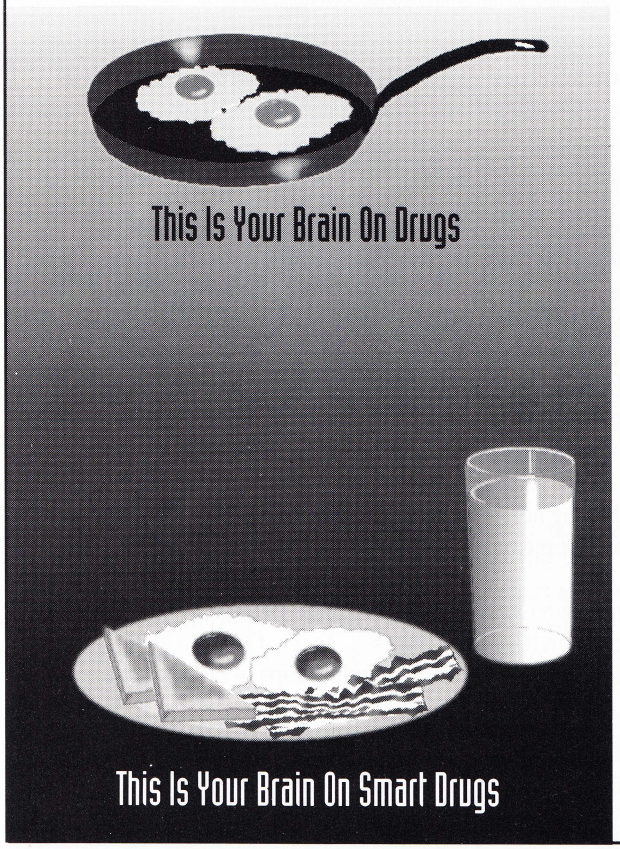
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Drugs for Sex: Real Aphrodisiacs

By Leila Mellow-Whipkit

The newspapers claim that there are no aphrodisiacs. The rest of the pure-sap media agree. The lesson here: if you want to know something, you gotta look it up for yourself.

Logging onto Knowledge Index (an inexpensive and easy-to-use online information service offered by Dialog), I queried the Medi-2 data base (Medline from 1966 to the present) for scientific research papers that included the word "libido." Medi-2 references have a descriptor field that contains a set of standardized indexing words. The descriptor for papers that deal with libido is SEX BEHAVIOR. I queried the service for papers containing the descriptors SEX BEHAVIOR and DRUG EFFECTS.

I found a lot of papers about a lot of different drugs. Here are a few for which I can provide sources:

L-dopa is an amino acid that the brain readily converts to dopamine. Dopamine is a neurotransmitter that is involved in emotion, aggression, and sexual turn-ons. For most people, there's a simple equation: more dopamine equals more libido.

In one L-dopa study, an 80-year-old man began having nocturnal emissions and erotic dreams, an 83-year-old woman began making suggestive remarks to hospital staff members, and most of the men in the study (mean age: 59) increased their sexual activity. Whew!

I take 325 mg of L-dopa every day, but then I'm my own research animal. I take it because I want to be more aggressive and horny, and it makes animals live longer than their litter mates . . . so what's not to like? Durk Pearson and Sandy Shaw told me to take antioxidants, including Vitamin E, with L-dopa or else it will auto-oxidize into something nasty.

Then there's bromocriptine (or Parlodel) and Deprenyl. The combination of these drugs also increases brain levels of dopamine, though differently than L-dopa. Deprenyl is a selective inhibitor of an enzyme called monoamine oxidase, or MAO. MAO takes dopamine out of circulation at the synapse, so inhibiting MAO increases brain dopamine levels. Aside from increasing libido in most humans, Deprenyl has some weird and

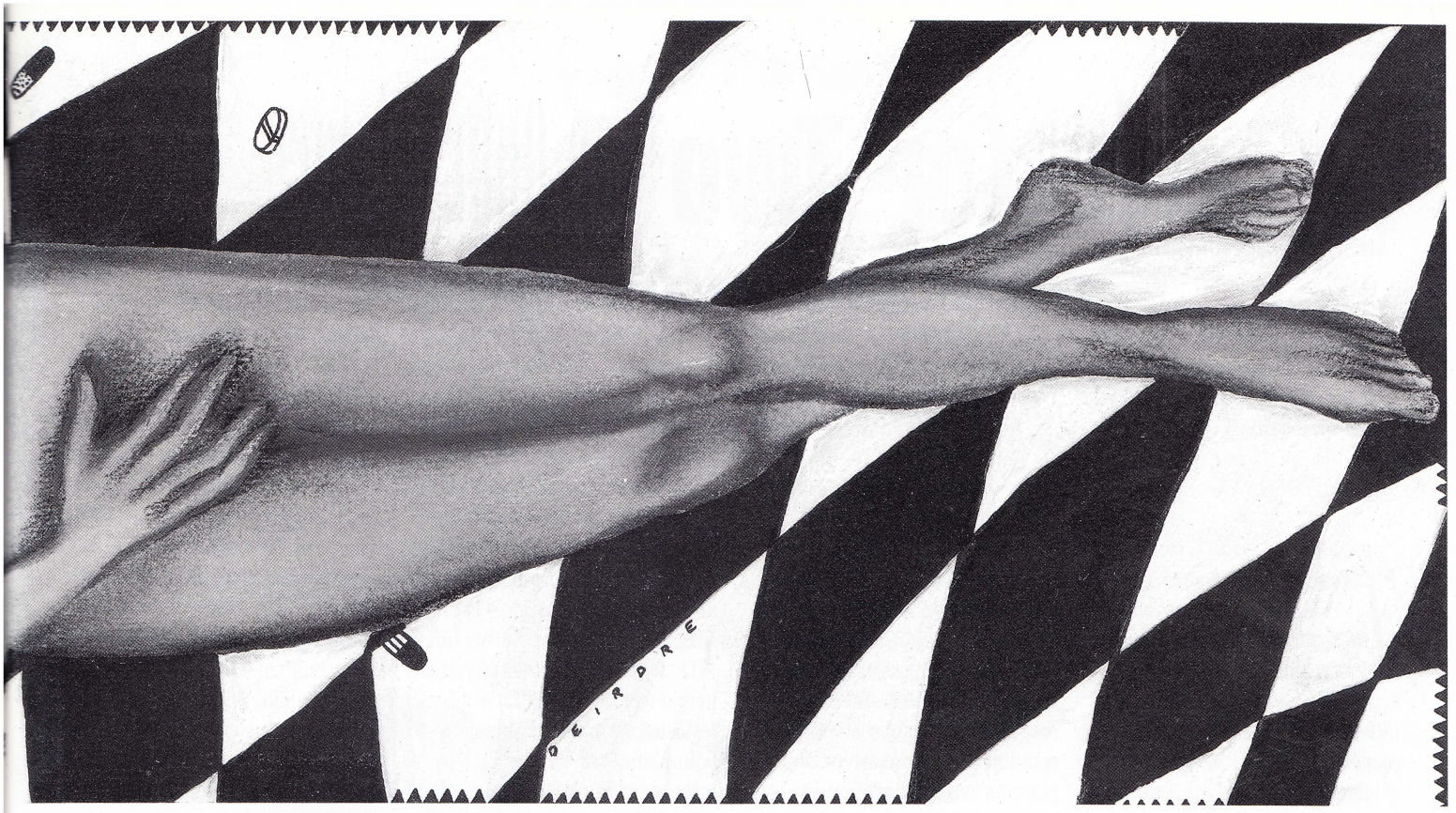


Illustration by Dierdre Valdes

wonderful side-effects like extending the lifespan of animals and people with Parkinson's. Be careful fucking around with deprenyl or any other MAO inhibitor. Combining an MAO inhibitor with an average dose of amphetamine or a methoxylated amphetamine such as MDMA (Ecstasy, Adam, X, Dr. Ma) can kill your ass but quick.

If you are going to try these aphrodisiacs, please check the *Physicians' Desk Reference* before experimenting.

Bromocriptine stimulates dopamine release. In *Life Extension: a Practical, Scientific Approach*, Pearson and Shaw warn postmenopausal women that bromocriptine may reset their biological clocks, making pregnancy a possibility. Judging by the references I found, bromocriptine makes rats and people hornier. People with Parkinson's need to take far less L-dopa if they take bromocriptine. I've been told that a research project combining L-dopa and bromocriptine was cancelled when many of the elderly people in the study began having sex, and two women over 60 years of age got pregnant. However, I can't find a reference to the study.

A few friends and I have experimented with combining small doses of all the above dopaminergics, with interesting effects. Two friends, both women, started finding all the guys they saw "*really* cute," although neither of them have acted upon any subsequent urges to date. I noticed an increased interest, and a concommitant enrichment of *actual* sex. Way cool!

Be forewarned that jacking up the levels of dopamine in your brain can initially cause nausea. If you start with small doses and gradually increase the dose, you will probably avoid this problem.

While there is apparently no medical literature reporting an increased libido from the use of vasopressin, the word on the street is that it intensifies and prolongs orgasm. Vasopressin is a hormone released by the pituitary that regulates short-term memory and water retention and is available in a nasal spray. Marijuana inhibits the release of vasopressin in the brain, and some pot smokers are now snorting vasopressin with the weed... when they can remember where they put it.

Piracetam is an intelligence-increasing drug covered in the last *Mondo 2000*. Piracetam's benefits are so profuse as to bewilder, but the Knowledge Index doesn't say a damn thing about SEX BEHAVIOR and Piracetam. However, several female acquaintances claim that Piracetam definitely increases their libido and... uh, follow-through. Timothy Leary says that intelligence is the ultimate aphrodisiac, and I'm not smart enough to argue the point.

L-dopa, Deprenyl, and vasopressin are available by prescription in this country, although your doctor will probably wimp out with some flimsy, authoritarian, bullshit excuse for not writing the 'script. Fortunately, all these drugs are available by mail. Here are two mail-order houses that carry them:

InHome Health Services
Box 3112
2800 Delemont
Switzerland

INTERLAB
P. O. Box 587
Newport Pagnell
Bucks MK 16 8AA
England

Write for price lists. When you order, be sure to include a signed note stating the following: "I hereby declare that the products I am purchasing are not for commercial resale. They are for my own personal use only. The supply ordered does not exceed three-months' usage and they are used with the consent of my physician."

I'd love to hear from anyone who continues to plow this field of research, so to speak. Write me c/o *Mondo 2000*.

Leila Mellow-Whipkit is the nom-de-processeur *of a San Francisco-based propagandist.*

A Word (or Two) on Aphrodisiacs

from Dr. Ward Dean

Interviewed by John Morgenthaler

To counterbalance the rantings of this mad, sex-addicted hacker, we thought we'd get the opinions of a medical expert. The following is a brief interview with Ward Dean, M.D., co-author (with John Morgenthaler) of Smart Drugs and Nutrients: How to Improve Your Memory and Increase Your Intelligence Using the Latest Discoveries in Neuroscience. *(See the Summer 1990 issue of* MONDO 2000 *for an article by John Morgenthaler entitled "New Drugs That Make You Smart.")*

Dr. Dean is a physician and researcher in gerontology. The interview was conducted exclusively for MONDO 2000 *by John Morgenthaler.*

—Leila Mellow-Whipkit

MONDO 2000: Do Deprenyl, L-dopa and bromocriptine work as aphrodisiacs?

WARD DEAN: Nothing works for everybody, but all of these drugs have been reported to increase sexual desire or sexual performance in humans. This property was usually noted as an interesting side effect of studies evaluating the drugs' therapeutic efficacy in various disease conditions. Deprenyl, a new drug for the treatment of Parkinson's disease, is a particularly interesting drug. It retards the degeneration of the substantia nigra, the part of the brain where dopamine is made. Some scientists theorize that we would all get Parkinson's if we lived long enough.

Deprenyl also significantly increased the "mounting frequency" of old male rats compared to that of their aging counterparts who received only a placebo. Many of my patients have reported similar results. Deprenyl also extends the maximum life span of animals by up to 40%, the equivalent of a human living to be 170 years old. This is the first time that the maximum life span of any species has been extended through pharmacologic means. One or two 5-mg tablets a week of Deprenyl may be enough to extend your life span and increase your libido. However, too much Deprenyl, or the combination of Deprenyl with other dopaminergics, may cause too much dopamine release. So if people experiment, they should be extremely careful to adjust their dosages. *The Physician's Desk Reference* has information on the symptoms of too much dopamine listed under "Eldepryl," which is another name for Deprenyl.

M2: Dr. Dean, are Deprenyl, L-dopa, and bromocryptine safe to use as aphrodisiacs?

WD: Nothing is perfectly safe, but the doses people usually use for the aphrodisiac effects are generally safe. The doses of these drugs that are used therapeutically for various diseases are higher than those needed for aphrodisiac effects. So the incidence of side-effects when used for aphrodisiac or life-extension purposes is pretty low.

M2: Do you have any other hot tips on aphrodisiacs for our readers?

WD: Patients and other physicians have recommended a German-made herbal formula called *Zumba Forte* to me. It contains 0.3 mg of methyl testosterone and a combination of herbal extracts, including ginseng, yohimbine, and probably ten or twelve others. Its effects seem to improve as the individual continues taking it. Yohimbe, in fact, has recently been approved by the FDA as a male aphrodisiac and is available by prescription.

M2: What definitely doesn't work?

WD: That's difficult to say, since interest in sex is very susceptible to the placebo effect. Spanish fly (*Cantharides*) is absolutely *not* an aphrodisiac, but is an extremely dangerous poison and urinary tract irritant.

M2: We have been told by several women that Piracetam has an aphrodisiac effect on them. What do you know about that?

WD: That's news to me. I wouldn't be surprised though, because anything that improves brain function is probably going to improve sexual functioning.

Ward Dean, M.D., has been actively engaged in gerontological research for over 10 years, and has published more than 50 articles and reviews in professional journals. He now has a medical practice in Pensacola, FL.

Dr. Dean is the author of Biological Aging Measurement *and co-author of the forthcoming book,* A Hypothalamic Theory of Aging.

To order his books, send a personal check to B & J Publications, P.O. Box 483, Santa Cruz, CA 95061. Or call 1-800-669-2030 for credit card orders (OPERATOR CANNOT ANSWER TECHNICAL OR MEDICAL QUESTIONS).

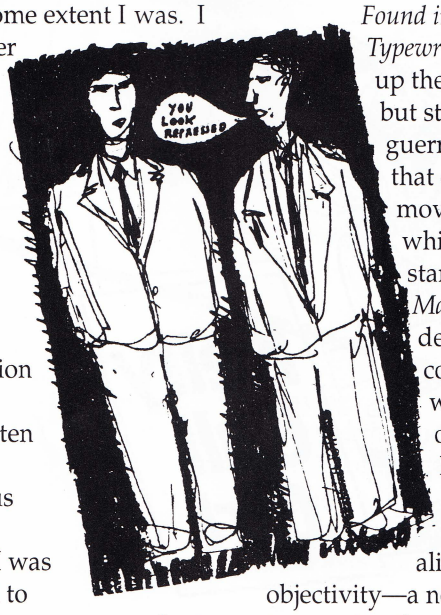
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Attitude: File Under "Bad"

REVIEWED BY
John Shirley

I can remember with nauseating clarity the claustrophobic dilemma, the endless struggle for self-control, as I told myself: *Stay at your desk, stay in this office building, do the work until quitting time!* I was taking dictation, I was typing it, I was trying to force myself to pay attention to office concerns as an "executive assistant" in a New York PR firm—read "secretary"—and all the time I was trying not to scream. I remember being tormented by my own lunatic sexual fantasies all day and knowing full well that this was the angry side of me trying to discharge its rage. I remember being ashamed that I couldn't focus on the work so well as the others; I felt like a pariah in the office, and to some extent I was. I remember the humiliation of being browbeaten by the ambitious young woman I was assigned to serve, a hungry young Junior Executive who expected me to cheerfully log unpaid overtime. I remember sometimes actually *sweating* with the effort of staying at my desk, so relentlessly did something in me rail for freedom. I remember it well. It was years ago, before I learned the tightrope dance, complete with parasol, that made it possible for me to make a living as a freelance writer. But, as they say, it's only a rent check away. It could happen again in the blink of an eye: the gruesome necessity of taking an office job.



BAD ATTITUDE: The Processed World Anthology, is a collection of writing and graphics from *Processed World* magazine (*PW* for short, but not to be confused with *Publisher's Weekly*). The first reprint, in a section called *The Cubicular World*, has the wonderful title *Manuscript Found in a Typewriter.* It sums up the subdued but stinging office-guerrilla tactics that enliven the movement for which *PW* is the standard bearer. *Manuscript...* describes coming back to work in an office after a long hiatus and seeing it from a new, alienated objectivity—a new capacity to perceive the unnatural horror of the labor as never before:

"As the day wore on, I felt recurrent pains in my lower back; the typed material in front of me would become blurred... as my eyes had to strain... under the harsh glare of the fluorescent lights. My heart pounded. I craved a stiff drink, or perhaps two or three. I thought I would weep for sheer frustration and rage at having to sit down in a tiny cubbyhole and transcribe bullshit—useless, pointless bullshit. The split between body and mind that even 'easy' work demands—and that I was diligently reinforcing despite my better instincts (which in any case were all locked up in a little compartment of my brain lest they interfere with the pace)—was breaking down. The inhumanity of wage labor can only really be experienced when its effects permeate your entire being."

My experience exactly.

The next piece details the disgust of working in a pet hospital. It's funny but vitriolic stuff:

"Just let some unruly, unloving female at the front desk ask for a raise, let alone gag when a fresh fecal sample wiggling with worms is shoved under her nose, let alone scream back at one of the stethoscope-toting prima donnas in the surgery, *let alone* lose her cool with even *one* of the spoiled, peevish, penultimately stupid clients or their drooling, scabrous, psychotic mammals. Instantly her decades of training are played upon to make her feel like a monster, unfit to be a member of the U. S. Feminine Love-of-Babies-and-Fuzzy-Cripples Institute..."

Then comes an article as finely tuned as any award-winning short story, a nonfiction *Walk on the Walled Side* (that would have been my title) through a faceless temp's dreary day as a Kelly Girl, arbitrarily plugged into the *Air-Conditioned Nightmare* of white middle-class male-dominated Hell.

Further on, the book offers up diatribes about sense-dulling and dangerous-ly toxic working conditions in Silicon Valley: the abuse of new technologies that threatens to destroy privacy and individualism; the often-suppressed research on the medical danger of longterm worker exposure to a word processor; analysis of wage slavery and organized labor's complicity in it; the power dynamics of office

work and its undermining by computer sabotage; and the earthier (or asphaltier) mazes run by bike messengers. And much more. There is a glorious profusion of satire; there is an anarchic profusion of style. There is poetry here, too, most of it sardonic, and there's a high quality in the commendably-rare recourse to free-associative writing.

On one level the book is a ceaseless round of bitching. But the unavoidable whininess ("...few really thought of themselves as office workers. More common was the hopeful assertion that they were photographers, writers, artists, dancers, historians or philosophers." Don't forget actors and performance artists) is much offset by the diversity of workplaces reported on, and the variety and fecundity of the book's political subject matter. They jam on just about everything, and that's apt: the monstrous and all-encompassing machine that we call civilization is to everything interconnected and in its interconnection affects everything. The book's intellectual and geopolitical peregrinations take us occasionally into some rarified air—*e.g.*, linguistics, or the ethical predisposition of Artificial Intelligence—but it returns again and again to the home base of the emotional numbing and mur-derous ennui of the office worker. Is it everyone's experience in that kind of work? Are all office workers and wage slaves experiencing "lives of quiet desperation?"

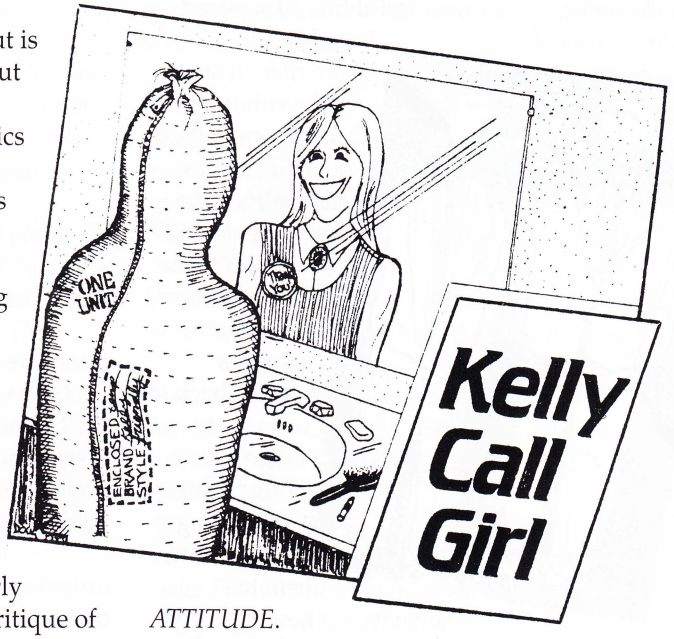
Probably not. Whether because they are roundly conditioned, inately unimaginative or inherently submissive, many people, I suspect, are reasonably content in their work. I do not count myself superior to these people; I envy them, *deeply*, or at least I do when I'm troubled by the erratic nature of a freelancer's income. I also envy people who can work contentedly with their hands on farms or crafts—it's easier to see how that sort of work can be gratifying. It produces something to take genuine pride in, in contrast to some zombied office-serf who takes misty-eyed pleasure in having produced the "perfect" presentation for the bimonthly report on, say, interoffice telephone system expenditures. It's like an old Abbott and Costello movie wherein Lou is pretending to admire a painting "just completed" by a madman exhibiting an empty frame.

BAD ATTITUDE is a big handful of a book, its physical heft perhaps deliberately like a catalogue. Its layout is crisply organized but buoyed with a multitude of graphics and sidebars. The introduction tells us that Situationism influenced *PW*, Situationism having reclaimed:

"... the radical core of Marx's thought and synthesized it with the ferocious humor of Dada and the poetic urbanism of the early Surrealists into a 'critique of everyday life.' Raising pleasure as its only standard, this no-holds-barred critique denounced postwar consumerism not as 'materialistic' but as *dreary*, a 'new poverty' of passion, imagination and adventure. The Situationist influence on *PW* is also reflected in the magazine's graphic style. The Situationists championed and greatly refined the technique they called *détournement*... which means ripping products of the ruling society—from tools to technologies to words and images—out of their approved contexts and putting them to new subversive use. *PW* graphic artists have applied this principle to ads and copy from *Time* or *Modern Office Procedures* as well as to original drawings and photographs. A subjectively truthful caption mutates the sense of a conformist illustration; or a bland corporate catchphrase is turned inside out by a bizarre or sinister graphic."

That pretty much describes the look of *BAD ATTITUDE*.

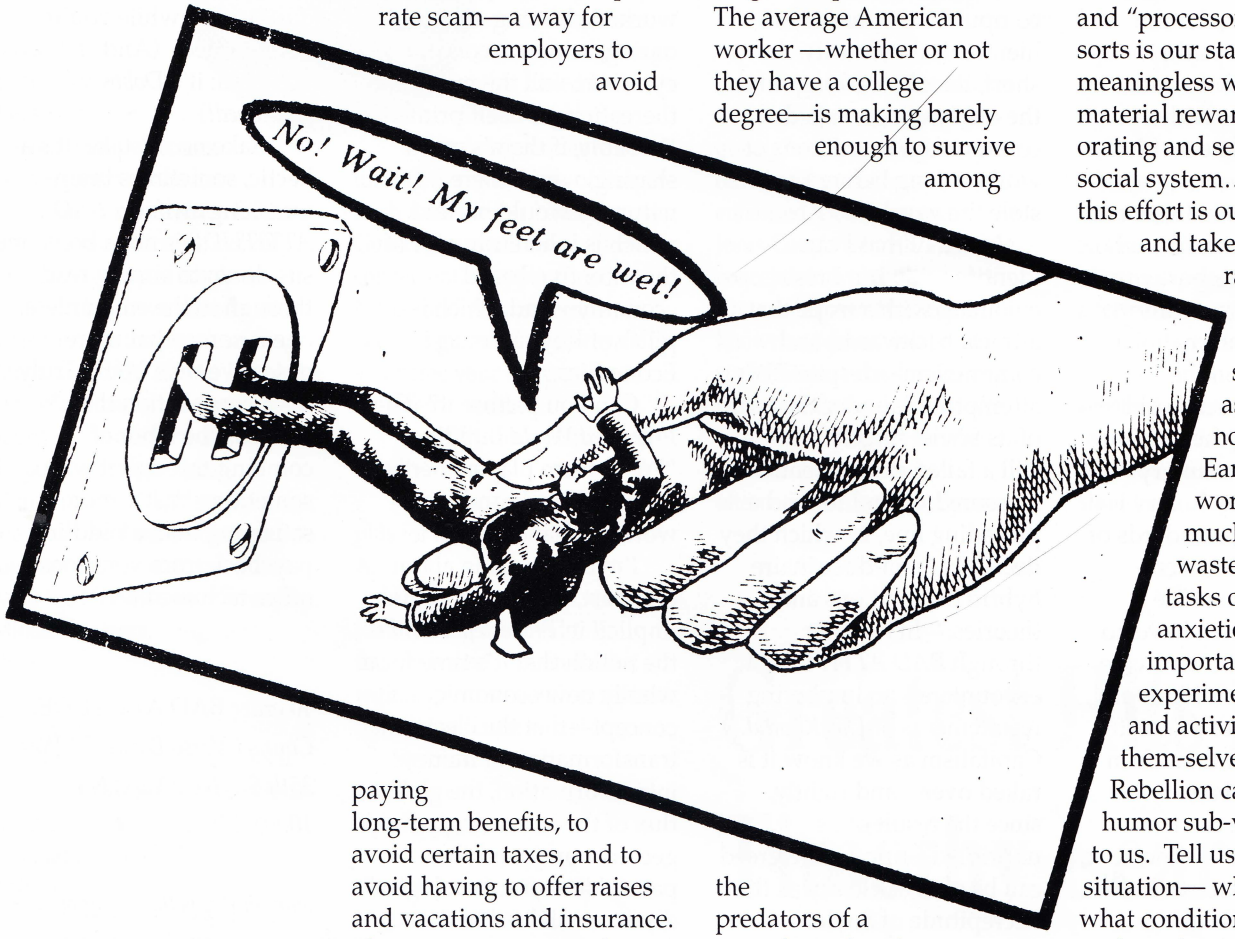
Raising pleasure as its only standard, this no-holds-barred critique denounced postwar consumerism not as 'materialistic' but as *dreary*, a 'new poverty' of passion, imagination and adventure.



Processed World magazine came about in 1981, and not a moment too soon. The 80's have seen big corporations experiment with computer

A Kelly Girl, arbitrarily plugged into the Air Conditioned Nightmare of white middle-class male-dominated Hell

monitoring devices which inform them on a minute-by-minute basis as to how much on-line time a worker puts in. The sons of bitches are using mind-controlling background sounds (they've sunk below Muzak) and behavior-programming office settings for maximizing focus on work; union-busting both overt and subtle; and a shift to a "temps" workforce. The Temporary Workforce started out as a way of patching up the porous hull of labor productivity. But employers quickly saw its potential, and it has evolved into a corporate scam—a way for employers to avoid paying long-term benefits, to avoid certain taxes, and to avoid having to offer raises and vacations and insurance. The average temp worker is paid less than the average permanent employee, of course.



The use of temps has skyrocketed and in some companies it comprises the bulk of the workforce, labor that goes on for months of temp assignment, but with all the security of a soap bubble. As noted in *BAD ATTITUDE*, page 79, "The rise of the 6-Month Worker," the temp industry and the minimum wage "student employee status" scam of the vast fast-food empires, have together effectively disenfranchised the American worker from the few gains made by organized labor and Congress. The much-touted American quality of life has, in this climate, begun a longterm spiral downward. The average American worker —whether or not they have a college degree—is making barely enough to survive among the predators of a growth-mad and perpetually ravenous economy.

Employee Civil Rights have been quietly sidestepped in the 80's. Minority workers are systematically divested of opportunities for higher level jobs by a collusion between employers and private employment agencies who use, literally, a secret code to indicate—contrary to the law—when a particular job is not to be offered to a person of color.

The first issue of *Processed World* stated:

"We hope *PW* will serve as a contact point for office workers who are dissatisfied with their lot in life and are seeking something better. The current situation of most clerical workers, secretaries, and "processors" of various sorts is our starting place: meaningless work with little material reward in a deteriorating and self-destructive social system... At the root of this effort is our desire to live and take part in a radically different social system, a society which as yet exists nowhere on Earth... In a world where so much of our time is wasted on boring tasks or ridden with anxieties, it is important that we experiment with ideas and activities that are in them-selves enjoyable. Rebellion can be fun and humor sub-versive... Write to us. Tell us your situation— where you work, what conditions you work under, what kinds of resistance you are already involved in..."

Processed World is, you see, a co-op publication, and it's important to note its openness to the active

involvement of a readership at large. The anthology reprints scores of reader letters as sidebars: *PW* reader participation extends even into the book. *PW* is a forum for discontent. It's radically openminded, and although it sometimes comes off as a vehicle for simply venting spleen, it's bristling with manifestos: "Only by cultivating our imagination and talents will we be able to find ways to shatter the existing order."

Some of *PW's* bitching about the American workplaces seems at times misplaced and self-indulgent. Consider the Asian sweat shops that provide our plastics and textile industries with a handy and infinite serfdom, and provide a base for our inflated sense of entitlement. The American workers who groan about their burdens are themselves carefully balancing the international labor pyramid on the shoulders of Third World workers whose cheap labor makes American luxury possible—and by luxury I mean the living standards of the "oppressed" lower middle class, the office workers who often have no idea how idyllic their living and working conditions are.

But I suspect *PW's* staff would point out that life in the sheep pen of an American office carries burdens that are distinct to it; that the misery of inculcation into the deadness of television culture and consumerist society is more profound than it seems; that all wage slaves are equally oppressed and comparing the lower wages, greater hours and even worse conditions of Third World workers to our own is like comparing death by hanging to death by starvation in a dungeon. The latter takes a bit longer, but death is death and suffering is suffering.

I noted the following background data on *PW* staffers with a touch of trepidation:

"They have in common an opposition to capital and wage labor, nationalism and governments, and a profound wish for a world whose people cooperate freely to satisfy collective needs and enlarge individual possibility, without the compulsions of money or hierarchical authority. In short, the old loathings and the old longings, called communism by millions of workers long before Lenin... stole the word."

Much of that I can identify with, but I resist enjoining with a trope that attracts backwards; and communism—despite *PW's* attempts to launder the term of its Soviet fingerprints—is still a failed experiment. I'm reassured when I re-read a preceding line, in which they declare a "non-doctrinaire hybrid of traditions and theories." In hunting through *BAD ATTITUDE* I encountered no lumbering restatements of *Das Kapital*. Capitalism as we know it is raked over—and rightly, since the result of its unbridled, supply-side greed can be seen as clearly as the decrepitude of Soviet Communist bureaucracy—but so far as I've seen, *PW* disdains to spout agitprop jargon.

I gleaned the following from the latest *Processed World* mailing—"Themes we want to address in future issues include (but are in no way limited to): Hip Capitalism, alternative business, self management and self exploitation... Velvet Capitalism... " Obviously—perhaps as an unconscious result of the borderline commercial potential shown by *Processed World*—free enterprise seems a little more palatable to the *PW* staffers lately. One wonders if the magazine will grow into an actual self-supporting business—one that requires hired *workers*. They'd be unable to bring themselves to exploit said workers, leaving us wondering, with our conditioned cynicism: will the magazine thereafter get itself printed? Probably, if there's profit sharing, which there naturally would be, and which is inherently part of the incentive-based economy—and which is a pillar of Keynesian Economics.

Can you picture it? The *Processed World* Building. "We're team players here at *Processed World* and if you work hard and..."

I'm only teasing about that part, and in fact I think implicit in *Processed World* is the notion that it's time for a wholly new economic concept—that the electronic transformation of money into information, the global flux of the increasingly fluid geo-economy, and the painful lessons of ecological disaster will lead to the evolution of a radically re-organized vision of the workplace which can no longer afford to devalue human individuality and creativity.

BAD ATTITUDE, then, is hereby recommended for virtually everyone from precocious teenagers to embattled workers to stodgy cigar-smoking CEOs. The brash, cunning, and hilarious graphics alone are worth the price of this volume. And the writing? If you think you already know about the sterility of the corporate workplace, the negation of women in business, the dangers of the work environment, the myriad exploitation of the worker, well, compute again, friend. *Processed World* turns up dozens of dizzying new perspectives. You'll learn while you're enter-tained. (And Subgenii: it's *Dobbs Approved!*)

Make no mistake: It's a hectic, sometimes brain-wracking artifact. *BAD ATTITUDE* is not a book one sits down to simply read through to the end, unless one is somewhat more obsessive than Yours Truly. It's a compilation that rewards the labor of combing through it with something vastly more satisfying than a piddling paycheck from your local office technocrat.

To order BAD ATTITUDE: *Contact Verso Books, 29 West 35th St., New York, NY 10001-2291.*

John Shirley is the author of numerous novels, most recently **Eclipse Corona** *from Popular Library/Questar;* **In Darkness Waiting** *from Signet/Onyx; and the story collection* **Heatseeker** *available from Scream/Press.*

Greatest Hits from Timothy Leary's Greatest Hits

SELECTED BY
R. U. Sirius

We have here a self-published, spiral-bound DIY collection of some of Timothy Leary's published essays from the years 1980-1990. While lacking some of the post-prison, post-early '70's "uncivil war" intensity of the last collection, *Neuropolitics*, this delightful grab bag of essays shows that Leary's infamous brain is still crackling.

Leary is generally underrated as a writer. Here then—presented for your delectation—are a few great hits chosen from *Greatest Hits*.

FROM *HOW I BECAME AN AMPHIBIAN*

The criminal-politicians-priests-generals who have controlled America since 1980 are the most slick, corrupt, cynical, successful group of crooks in history. They have looted more treasure from the people of America and the Third World in nine years than all of the plunder, booty, spoils of every corrupt despotic regime in history. Marcos, Louis XIV, Nero, Attila the Hun! Add them all up and together they don't come close to what the Meese-Deaver-Trump-Milken-Pentagon gang have stolen.

FROM *CRIMINALIZING THE NATURAL AND NATURALIZING THE CRIMINAL*

Extremely White Men worship an Engineer God whose ethical commandment is: "Put on your uniform and work!"

The virtuous citizen, like a good machine, is now defined as dependable, prompt, reliable, efficient, productive.

FROM *THE WOODSTOCK GENERATION: WHERE WERE YOUR MOM & DAD TWENTY YEARS AGO TODAY?*

So goodbye to Turn on, Tune in, Drop out!

And hello to the motto of the 80's: Hang on. Hang in. Hang over?

And guess what the War on Drugs produced?

A booze epidemic.

Alcohol, the drug of choice of the NRA, the Bubba hunting crowd, the American Legion, is back in the saddle.

Turn Down! Tune Out! Throw Up!

And cocaine.

An epidemic of toot, snort, snow, blow, base, crack has the inner cities wired and fired. Cocaine, the drug that fueled Hitler's SS and the Nazi Blitzkrieg suddenly is turning the inner-cities of Reagan-Bush America into battlegrounds. Guns, rifles, automatic weapons conveniently supplied by the N.R.A. and your government licensed gun-dealer. Just walk up and name your weapon, Bucko. No questions asked.

Turn Out! Shoot Up! Drop Dead!

And here's a pharmaceutical plus for the post-Woodstock America!

Guess what unique new Rambo drug the stand-tall, muscle-bound Reagan-Bush regime gave our youth to replace the wimpy Carter years!

Steroids!

Turn Off! Tune out! Pump Up!

FROM *BACKWARD CHRISTIAN SOLDIERS: A BRIEF HISTORY OF THE WARRIOR CASTE IN AMERICA*

The piece was written by by William Broyles Jr., a white, Protestant ex-Marine from Texas, who made a good living in the 1980's re-fighting the Vietnam War in magazines and glorifying the enduring addiction of the American Warrior Caste and its sponsor, the Republican Party, to killing colored people with high-technology weapons.

FROM *THE NEW BREED: HOW SELF-RELIANT YOUTH BROUGHT DOWN THE BERLIN WALL*

The word *industry* comes from the Latin word *stru-ere*, to build. These new Designer People do not "build." Robots or Workers build. The New Breed will fashion.

FROM *COMMON SENSE ALTERNATIVES TO INVOLUNTARY DEATH*

co-written with
Eric Gullichsen

Here we experience the sudden insight that we need not "go quietly" and passively into the dark night or the neon-lit, muzak-enhanced, Disney-heaven of the Jesus-Gang. We realize that the concept of involuntary, irreversible metabolic coma known as "death" is a feudal superstition, a cruel marketing tactic of industrial society. We understand that one can discover dozens of active, creative alternatives to going belly-up clutching the company logo of the Christian Cross, Blue Cross, Crescent Cross or the eligibility cards of the Veterans Administration.

In the near future, the now merging methods of computer and biological technology will make the human form a matter totally determined by individual choice.

As a flesh-and-blood species we are moribund, stuck at a "local optimum," to borrow a term from mathematical optimization theory.

In the 21st century imagined by William Gibson, wily cybernauts will not only store themselves electronically, but do so in the form of a "computer virus," capable of transversing computer networks and of self-replication as a guard against accidental or malicious erasure by others, or other programs. (Imagine this somewhat droll scenario: "What's on this CD?" "Ah, that's just old Leary. Let's go ahead and reformat it.")

Timothy Leary's Greatest Hits *is available for $17.50 postage included from Knoware 11288 Ventura Blvd.,Suite 702, Studio City, CA. 91604*

MARGINALIA

The 60's live on and on. Citadel Press, a new imprint of the Carol Publishing Group, is republishing some of the decades' underground classics—out already are new editions of *RINGOLEVIO* by Digger founder Emmet Grogan, *MOVING THROUGH HERE* by Don McNeill, *RED-DIRT MARIJUANA AND OTHER TASTES* by Terry Southern and *TALES OF BEATNIK GLORY* by lead-Fug Ed Sanders. Other planned rereleases include Jane Alpert's *GROWING UP UNDER-GROUND.*

Citadel has no corner on the 60's market, though. Vintage Books has republished Robert Sabbag's cocaine classic *SNOWBLIND.* Reread it for a view of a much more innocent time... and the Putnam Publishing Group, not to be outdone in the revival business, is publishing the complete, uncut text of Robert Heinlein's *STRANGER IN A STRANGE LAND.* Read it to a water brother.

Holidays in Cambodia?

REVIEWED BY
Richard P. Greenfield

It happened this way: August 1976, a train reaching a station outside Frankfurt-An-Der-Oder in what was then East Germany—a country the US had only opened diplomatic ties with 18 months earlier. The station outside the "other Frankfurt" was also the border crossing to Poland.

Olive-drab uniformed Border Police, Grenz Polizei, carrying automatic weapons and glowering, walked up and down the corridor checking papers. Two came into the compartment. One stayed, the other left with my passport. When he returned, he had two more GP's with him. They also carried automatic weapons. All of them were pointed in the wrong direction — at me. "There is a problem with your visa, mein Herr. You will accompany these men to answer some questions."

It was one of those things they do *not* tell you about in travel guides.

A few years ago, it was predicted that the travel book market would be the fastest-growing segment of publishing. At the time, the prediction appeared to defy common sense. The dollar was taking a pasting on the currency markets, the deficit was rising, and fewer people were travelling. But apparently those who *did* hit the road wanted to be well-informed. And there was always the vicarious armchair traveller.

I've been an avid reader of travel guides, first person accounts, and impact studies since the long-gone days of $200-round-trip flights from New York to Europe.

Also, as a journalist and fiction writer, travel guides provide me with a sense of, and specifics about, places I *can't* get to. Yes, Mondoids, you might say that I use travel books to take "virtual trips"—all grist for the mill.

There are a number of distinct sub-genres in the Travel Book market. The first-person-singular travel account is a particular favorite of mine, the more quirky and crochety the better.

Anecdotal or opinionated, it has an immediacy about it that more detailed objective guides utterly lack. Vintage Press (part of Random House), Atlantic Monthly Press, and Penguin have all recently published notable titles in this area. These are authored by all sorts, from experienced foreign correspondents and celebrity adventure travellers to budding novelists who have taken the time to immerse themselves in an alien culture and place, and returned to tell the tale.

Jeff Greenwald's hysterical *Mr. Raja's Neighborhood,* published by a small press, was around but not easily available when I went to Nepal. I'm sure it would have colored my journey in a most peculiar and enlightening way. His new book, *Shopping for Buddhas,* is published by Harper & Row (San Francisco).

At the time of the $200 trans-Atlantic flight, most student travellers would set out with a copy of *Let's Go!* (much expanded and now distributed by St. Martin's Press). Additionally an inspection of her backpack would likely yield one of the three "F" Guides: Fielding's (now available from William Morrow), Fodor's (now from Random House), or Frommer's *(Europe on $5 a Day,*



now $45 a day, from the Prentice-Hall division of Simon & Schuster). All of these have their good points. The *Let's Go!* series, now available for individual countries, is always accurate about such things as hotels and restaurants, and is pitched to an audience that will travel more flexibly than most. The Frommer guides are pitched to a somewhat older and more sedate traveler. All of them are accurate, and have good information on local hotels, hostels, restaurants, museums, and the occasional local specialty shop. But to dig beyond the usual tourist attractions and get at the more genuine lokal-Kulture, move on to the more specialized guides!

Specific country and city guides are the ones that have really exploded onto the scene. For instance, Harper & Row just published *The Vietnam Guidebook for Tourists and Business Travellers*, and Lonely Planet, not to be outdone by a mere publishing colossus, has in its fall catalogue *Vietnam, Laos, and Cambodia—A Travel Survival Kit*. No mention is made of whether the book comes with any of the requisite survival tools, like an automatic weapon and a rocket launcher. Should you inadvertently get trapped in a firefight between various contending forces, I suppose you can just find the nearest public phone and call American Express. While the fine points of etiquette for dining with the Khmer Rouge will not be everybody's cup of *cha*, these guides—if there are any takers—threaten to give the phrase 'adventure travel' brand new shades of meaning. What's next? The Oil War Tour of the Persian Gulf? There are places on Earth where the line between being a tourist and being an intruder is perilously thin. But who am I to moralize? A cheap holiday in other people's misery may just be the ultimate way for unconscious yuppies and the terminally ironic to "process" their various death wishes. And while some tourists want to go shopping and others want to see firefights and rocket attacks, most of us are somewhere in between.

Here then are a few items for the intelligent traveller to look out for:

Two American travel writers, Robert Kane (Passport Books) and Stephen Birnbaum, (Houghton-Miflin), have guides that cover Europe, the US, and Canada.

Penguin and Bantam both have a line of city and country guides that they promise to update every year. Little, Brown (whose ultimate corporate parent is Time-Warner) has also introduced a line; these are city guides such as "Essential Amsterdam."

Europeans have long been known as more discerning travellers than Americans. So Prentice-Hall (a division of Simon & Schuster, itself a division of Paramount Communications) got the idea of bringing two based-in-Europe guides over to the United States. The *Gault-Millaus* books, translated from the French, are decidedly upscale and crammed with cultural-historical tidbits and commentary on current events. The *Real Guides* from Britain are for the kind of traveller who will stray from the designated tourist path. The guides all contain sections called "Context" wherein the cultural nuances and associations are highlighted. Thus their Amsterdam Guide includes an extract from a mystery novel by Nicolas Freeling, while the California Guide discusses Raymond Chandler and Philip K. Dick. The *Real Guides* are like conversations with very knowledgeable and urbane friends.

The *Lonely Planet Guides* are another successful transplant from Australia that cover out-of-the-way places that have become recently trendy (Nepal, Bali, Australia itself, New Zealand, the Pacific Rim). The Aussie publishers have now moved their offices to Oakland, California and the newest addition is, predictably, Eastern Europe.

The *Access Guides* are the top-of-the line for visual pyrotechnics. Created initially by Richard Saul Wurman *(Information Anxiety)*, a trained architect, these guides slice a city up into sections and then take you down it, street by street.

Specialty guides are a new genre in a market that is becoming super-saturated. This might mean something like a "British Mystery Guide to London," "Shopping for a Swiss bank Account" or "Cooking Schools of Europe." Most of them, though, are about that universally popular activity, shopping. For those with big eyes and fat wallets, Bantam publishes *Born to Shop* and its two-volume set, *Keep One Suitcase Empty*—a guide to discount outlets throughout Europe. The best specialty guides are usually local efforts that do not get wide circulation. A personal favorite, for those who may be travelling in the Pacific Northwest is Sasquatch Books, which publishes *Seattle Best Places, Portland Best Places, Cheap Eats in Seattle*, and Best *Places Northwest*.

William Burroughs is fond of quoting the old French Proverb, "Navigare necesse es. Vivare no es necesse." (It is necessary to travel. It is not necessary to live.) I can only hope that repeating it here does *not* inspire any *MONDO* readers to visit beautiful Phnom Penh this year, but if it does, at least now you know where to *get help*. M

&

No More Fear of Technology—that is the theme of a book of essays ponderously titled *THE ART OF HUMAN-COMPUTER INTERFACE DESIGN*, edited by Brenda Laurel and published by Addison-Wesley. Everyone from Alan Kay to Timothy Leary is in here, and while none of the essays can be described as light reading, none is long enough to really put anyone to sleep, and several are quite amazing. These essays raise some important initial questions regarding our interaction with increasingly complex "thinking machines."

Pocket Books has reprinted Professor Ronald K. Siegel's book *INTOXICATION*, which is an anthropological/zoological investigation of the essential need for, and use of, mind-altering substances by *all* animals. Siegel's bottom line is that the urge to get high is a part of us, and the war against it is a denial of nature. His suggestions to counter that are the most delightful and thoughtful kind of heresy.

Socially conscious art fans have been aware of Leon Golub for years. Viking Press has published *LEON GOLUB—PAINTER OF DARKNESS*, a biography/essay/interview by journalist Gerald Marzorati. It's a look at what shaped the artist, in the artist's own words and an attempt to capture verbally the raw emotion that Golub catches with light and paint.

Culture vultures should ask Harvard Press where and when the trade paperback edition of Greil Marcus' *LIPSTICK TRACES* will appear. My vote for the most intriguing book of 1989, it deserves a larger readership and a lot more attention.

MONDOzines

What's a MONDOzine? It's a little publication that's exciting, cutting-edge, feisty, and well-done. It's the use of the guerrilla information network to propel your mind into the next paradigm.

Here are the best MONDOzines out there:

2600 ($18/yr from PO Box 752, Middle Island, NY 11953): The premiere zine for the explorers and outlaws working at the frontier where silicon meets wetware. Hacking, phreaking, social engineering, circuit diagrams, cautionary tales, and fervent defense of the First Amendment all show up here.

REVIEWED BY
Mike Gunderloy

BOING BOING ($10/4 issues from PO Box 12311, Boulder, CO 80303): "I've had it up to here with this entropy business," their subscription blank reads. Inside you'll find all sorts of things to massage your brain into new modes of thought. So far they've interviewed Robert Anton Wilson and Rudy Rucker, played with fractals and brain machines, and printed comics and fiction that live up to the promise of "guerrilla reality engineering."

CRYONICS ($2.50 from ALCOR, 12327 Doherty St., Riverside, CA 92503): News from the most organized bunch of cryonicists around. If you're giving any thought to launching your frozen body on a journey into the future, you need this. They can update you on the technology, sign you on (in toto or just your brain) and keep you up to date on the wild happenings when our legal system is forced to confront the possibility of conquering death.

EXTROPY ($2 from Max O'Connor, c/o Mudd Hall of Philosophy, USC, Los Angeles, CA 90089-0451): Extropians are folks who oppose entropy, through a variety of technological and philosophical means. They're into life extension, memes, anarchy, nanotechnology, groovy drugs, and ultimate freedom. Wild and wooly.

GENDER EXPRESSIONS ($30/yr from Bisley Enterprises, c/o Lifestyle Books, 7580 W. 16th Ave. #201, Lakewood, CO 80215): Gender bending is one of the waves of the future, and this zine of transsexual/transvestite liberation will give you some hints of the coming turmoil. These folks are laying down the legal and medical footwork for a future where gender and sex are conscious decisions rather than accidents of biology.

GOING GAGA ($2 from Gareth Branwyn, 2630 Robert Walker Pl., Arlington, VA 22207): Gareth is a linker, someone who spreads information like the fertilizer it is. He goes back into the communities movement and forward into the cyberfrontier, linking it all up with the zine crowd. Virtual realities, wild artwork, cyberpunk, dangerous drug experiences, crazy surreal art experiences, and more fill these pages to the bursting.

LIZZENGREASY ($2 from c/o Fletcher, Shuhoso #8B, Umegaoka 1-56-4, Setegaya-Ku, Tokyo 154, JAPAN): If there's a Mondo country in the world, it must be Japan. This zine comes from a bunch of American expatriates, and pulls together key issues on Japanese culture as seen by outsiders. Shoplifting tips, Japanese romance novels, Japan's fascination with baseball, koi, and the Tokyo subway system are among the themes thus far explored. They also review an international cast of books, music and zines.

NOMADNESS ($3 from Nomadic Research Labs, PO Box 2390, Santa Cruz, CA 95063): Steven Roberts has one of the ultimate fun tech jobs. He rides around the country on a recumbent bicycle, loaded with computers, radio, satellite dishes, solar power, and regenerative braking that has the side effect of keeping the beer cool. And now he's trying to organize a whole community of technological nomads. This is the way to get in touch.

OFFSHORE MEDICAL THERAPIES ($19/yr from PO Box 833, Farmingdale, NY 11737): This serious newsletter tracks interesting and useful drugs that aren't yet available in the USA. Longevity and unusual cures are the emphasis, and they give medical literature references for everything they cite. If you've got the urge to be your own guinea pig, you can never have too much information.

SCIENCE FICTION EYE ($10/3 issues from PO Box 43244, Washington, DC 20010-9244): A slick zine of science fiction and beyond with cyberpunk/post-cyberpunk leanings. In the most recent issue, Misha and Tad Kepley take dual looks at the RE/SEARCH line of publications, while Pat Murphy, Lisa Goldstein and Karen Joy Fowler talk about feminism and SF.

TRAJECTORIES ($6 from The Permanent Press, PO Box 700305, San Jose, CA 95170): This is Robert Anton Wilson's showcase, a place for this modern performer to show off his wit and wisdom and make some connections for people. Whether it's picking on the War on Drugs, looking at Damned Things, or arguing for global energy networks, virtual reality and nanotechnology, Wilson is sure to enrage—and inspire.

This is just a sampling of the fine alternative literature out there. If you want to find more, send $3.75 for a sample of FACTSHEET FIVE to 6 Arizona Ave., Rensselaer, NY 12144-4502. M

Mike Gunderloy edits the chock-a-block Factsheet Five*—an exhaustive and highly personal annotated review of fringe and specialty 'zines*

How to Tell a MONDOID from an Ordinary Human

A QUESTIONNAIRE

We are perversely curious about YOU. If you give us a true reading on what the hell you are all about, perhaps we can come up with some psychographics to satisfy our advertisers. So, if you don't mind, we'll just inject our psychoprobe into you NOW...

1 What's your real age? _____
❑ solar calendar ❑ internally perceived
❑ socially projected

2 Most of your primary and secondary sexual appurtenances are:
❑ male ❑ female
❑ can't find appurtenances with both hands

3 Your desires are mostly:
❑ hetero ❑ homo ❑ ambi ❑ auto ❑ nil
(this has nothing to do with demographics, we just want to KNOW)
And your favorite sexual fantasy is:
_____
_____

4 Your average annual income is:
❑ below $15k ❑ 15 - 30k
❑ 30-50k ❑ 50-100k ❑ over 100k

5 You would describe your income as:
❑ eroding ❑ erratic ❑ disposable
❑ manna from heaven ❑ other_____

6 Do you work in information/communications? (computers, arts, education, etc.) ❑ no ❑ yes
Please specify _____

7 What was the last item you spent over $500 for? _____
and $5000? _____

8 You acquired your copy of MONDO 2000:
❑ by subscription ❑ at the newsstand ❑ at a trade show or cyber event ❑ from your kid ❑ other

9 How did you get like this... and are you seeing anyone about it?_____
_____

10 What is your power animal? ❑ gerbil ❑ wombat
❑ dugong ❑ axolotl ❑ cooties ❑ raven ❑ pit bull
❑ lemur ❑ Roadrunner ❑ other _____

11 Have you been surgically enhanced?
❑ no ❑ ears pierced, ___ holes ❑ yes, and how?;
_____

12 The personal style you hope to project is
❑ academic ❑ professional ❑ old money ❑ twisted genius ❑ street samurai ❑ elusively bland
❑ 3rd generation clone ❑ alien visitor
❑ Robocop ❑ other_____

13 But you dress mostly in
❑ nerd ❑ salaryman ❑ designer chic ❑ funky chic
❑ Deadhead ❑ paramilitary ❑ hair, skin, tattoos
❑ other _____

14 And dream in
❑ velcro startrek ❑ feathers, sequins, or bananas
❑ Harley Davidson❑ torque, loincloth, woad
❑ chips in forehead, etc.
❑ other _____

15 You use these vitamins or other health aids:
❑ drugstore multis ❑ custom vites ❑ anabolics
❑ life-extenders ❑ weight maintenance mixes
❑ intelligence enhancers ❑ aphrodisiacs
...And find noteworthy:
_____
_____

16 Someone asks you if you're bibulous. You:
❑ ask if he's a Jehovah's Witness
❑ haul back and smack him ❑ hiccup
❑ say it's between you and your bartender

17 Your favorite tipple is: ❑ Dos Equis ❑ tree frog beer
❑ Fast Blast ❑ vanilla extract ❑ Cinzano
❑ Glenlivet ❑ Kumiss ❑ Pernod ❑ other
_____
_____

18 You find yourself accidently locked in the bathroom for the weekend. What woud you prefer to find on the toilet tank? (choose 2) ❑ CINEFEX ❑ Soldier of Fortune ❑ Covert Action Bulletin ❑ Whole Earth Review ❑ Vanity Fair ❑ The Aging Connection ❑ Weekly World News ❑ New Look ❑ Monk ❑ other _____

19 You're at a party and hear that the punch bowl has been spiked. You hope it is: ❑ testosterone ❑ Acid ❑ Datura ❑ steroids ❑ Uforia ❑ sodium oxybate ❑ yohimbe ❑ tarantula venom ❑ vitamin C

20 Right now you fondle these machines: ❑ VCR ❑ camcorder ❑ picture phone ❑ portable computer ❑ DAT player ❑ CD player ❑ cellular phone ❑ fax ❑ ELF detector ❑ cuisinart ❑ hair frizzler ❑ modem ❑ brain-balancing widget ❑ vibrator ❑ blender ❑ electronic musical instrument ❑ other _____

21 But you really lust after (name 3):

_____

_____

_____

22 You currently own or work on what computer? _____

23 But you would prefer to work with this: _____

24 Your last three software acquisitions were:

_____

_____

_____

25 What applications do you like to use?
❑ data bases ❑ spread sheets ❑ games ❑ communications ❑ CAD/CAM ❑ music ❑ utilities ❑ graphics ❑ other _____

26 What technology do you want to see become real?

_____

27 For new musical media, I: ❑ cannibalize my friends CDs ❑ Make my own tape collages ❑ spend an ungodly amount of money on virgin (circle one) vinyl / cassettes/CDs ❑ make third generation tapes off friends ❑ trade live Dead tapes for 'shrooms or vice versa ❑ other

28 I would describe my favorite musical genres as: ❑ wimpy New Age ❑ ear mortifying ❑ international cuisine ❑ speed metal ❑ avant-garde purist ❑ minimalist ❑ rap ❑ Rolling Stones, Bob Dylan & Neil Young ❑ 4AD ❑ House ❑ neo-folk ❑ industrial ❑ psychedelic thrash ❑ oceanic/deliquescent

29 Do you buy computer games? ❑ no ❑ yes
and I play _____

30 Do you rent videos? ❑ no ❑ yes. and they're usually: ❑ bizarre, art or cult flicks ❑ music or humor ❑ foreign or classics ❑ sf ❑ mainstream movies ❑ slasher/horror ❑ exercise videos ❑ instructional ❑ porn—and why the hell not? ❑ other _____

31 You admit to watching television: ❑ at work with software that frames it in the corner of my computer screen ❑ just *Twin Peaks & The Simpsons* ❑ 5 to 7 hours a day like any red blooded American, with a gun in my lap and Dan Rather telling me what to be scared of ❑ minus the volume except when the test patterns come on ❑ all the time, on several monitors tuned to different stations with the volume off and MC 900-Foot Jesus playing on the CD ❑ Never! I wrote the book *Four Arguments for the Elimination of Television.* ❑ Selectively—and the shows I watch are:

_____

32 I'd think you guys were selling out if you sold ads to: ❑ anybody at all ❑ Church of the SubGenius ❑ liquor and beer companies ❑ tobacco companies ❑ phone sex ❑ American Express ❑ Burger King ❑ feminine hygiene spray ❑ U. S. Army Recruitment ❑ Saddam Hussein ❑ M C Hammer

33 Hey! I'd buy Absolut Vodka, Nike sneakers, Calvin Klein jeans and even believe that the very *night itself* was made for Michelob if they'd just advertise in this way-cool magazine: ❑ true ❑ false ❑ disgusting

34 In future issues, you'd like to see more of: ❑ fashion & trends ❑ female pulchritude ❑ cartoons ❑ survival strategies ❑ responsible science reporting ❑ serious refereed articles ❑ other _____

35 You don't want to see anything more of ❑ Durk & Sandy ❑ "cascading toilet paper rolls of editor glorification" ❑ techie cheerleading ❑ glib prognostication ❑ pop pabulum ❑ drug education ❑ other _____

36 BONUS QUESTION
What does "New Edge" mean to you, in 500 words or less? on a separate sheet if you want (No fair cribbing!)

Thanks, now tear out your response and mail or Fax it to:
MONDO 2000
P O Box 40271
Berkeley, CA. 94704
FAX: 415-649-9630

cut or tear along this line (if you know what's good for you)

Sim City, A Cybernetic Playground

Rocky Rococco

Ever wished that you were running your city, instead of those clowns down at city hall? Well now you can run your own simulated city with SimCity from Maxis Software. SimCity simulates a complete cybernetic city, inhabited by little citizens called "Sims." They work, eat and play just like we do, in a city displayed on your computer screen.

In SimCity, you're the mayor and your word is law. Like any mayor, you don't control the individual citizens. No. You control things like zoning, the electric grid, roads, parks, police and fire departments, sea ports, airports, tax rates and budgets. The SimCity program simulates other aspects of a city life that aren't under your direct control: internal and external markets, pollution, crime, land value and job availability. These things vary, depending on the conditions that exist inside the city. Pollution, for example, is naturally worse in the industrial areas and land values suffer for it.

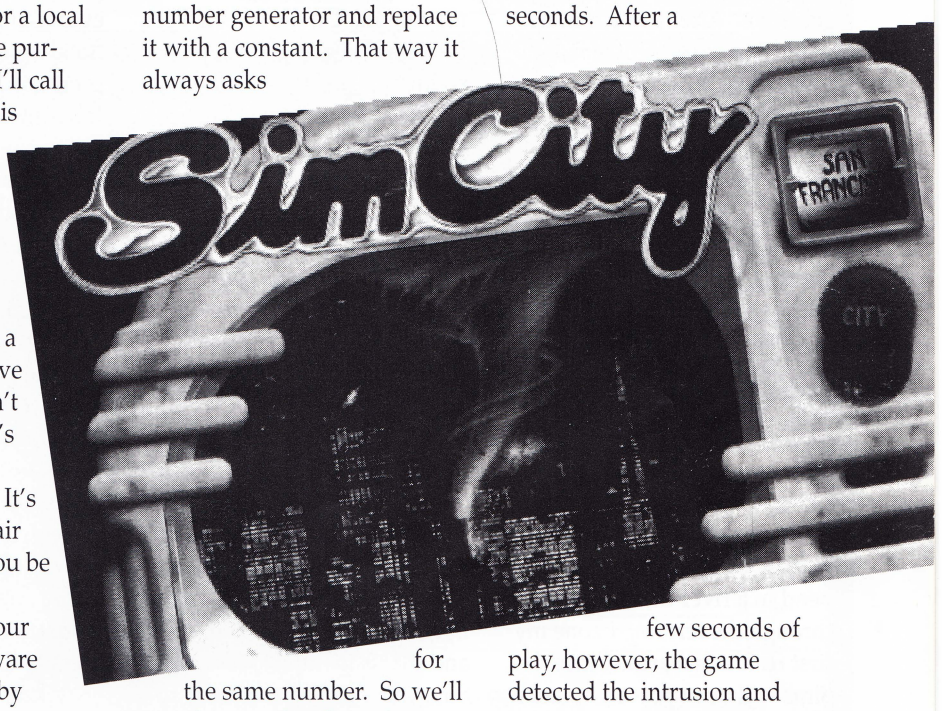
"First of All, I Have the Copy Protection Removed"

The first thing you see when you start a new city with SimCity is a screen that asks you to enter some numbers from a sheet that comes in the box. The sheet has dark purple text printed on dark brown paper (making it impossible to photocopy). It's pretty hard to read in good light and almost impossible to read in the dim light of my computer room. My first order of business was to get this copy protection removed. It was driving me blind.

I left a message for a local cracker friend (for the purposes of this review, I'll call him The Expert) on his BBS. Would he give me a hand with this nasty copy protection? Yes, he would.

Removing the copy protection from a game that you've paid for isn't piracy, it's good sense. It's only fair that you be able to make your own software more usable by changing it to suit you. However, it's not fair to crack a program and distribute free copies to everyone you know. After all, if companies can't make and sell games at a profit, there won't be any cool new games like SimCity for you to enjoy. Note however, that some companies don't want you to be able to change the software that you've paid big bucks for and declare in the license agreement that you must not alter the software in any way. Thankfully, Maxis is not one of these companies.

I met with my expert and showed him the problem. He wasn't impressed with the copy protection scheme. He asked if I wanted the quick and dirty job or the complete, seamless removal of the copy protection. "Quick and dirty," I told him. I just didn't want to deal with that brown sheet of paper. The Expert leaned back. "If they're asking for a random number from the manual or one of those cheat sheets, the easiest thing to do is make it non-random, take out the call to the random number generator and replace it with a constant. That way it always asks for the same number. So we'll put that number from the text of the alert. That simple. You'll never need the cheat sheet again."



This first attempt at removing the copy protection worked fine... for a few seconds. After a few seconds of play, however, the game detected the intrusion and began to blow up random little bits of the city. I pictured smug game designers boasting about the impenetrable

protection they'd thrown up around their code. The Expert just smiled and re-booted the machine. After a few minutes, he'd located the problem and devised a better line of approach that side-stepped the detection code. The job was done. Elapsed time, 15 minutes. (For details, see below "Cracking Mac Software for Fun & Profit, Words from an Expert)

Running a Virtual City

OK! So it's on with the game. I start a new city (naming it after myself, of course) and I'm presented with a map of the terrain that it'll occupy. I zoom in close on a nice spot near a bend in a river that flows through the terrain. I zone my first residential area. Since the Sims will need power, I place a power plant (choosing coal over nuclear) a good distance away and run power lines over to the site of my new city. Immediately Sims start moving in. On the screen, I see little houses going up in the residential areas.

Now, these Sims will need jobs. It's time to zone some industrial areas. This'll be a nice city, though. I'm going to put all those nasty factories well away from the residential areas. No pollution in my city! Once the industrial sites are zoned, I have to run roads and power out there so the factories can run and the Sims can commute to work.

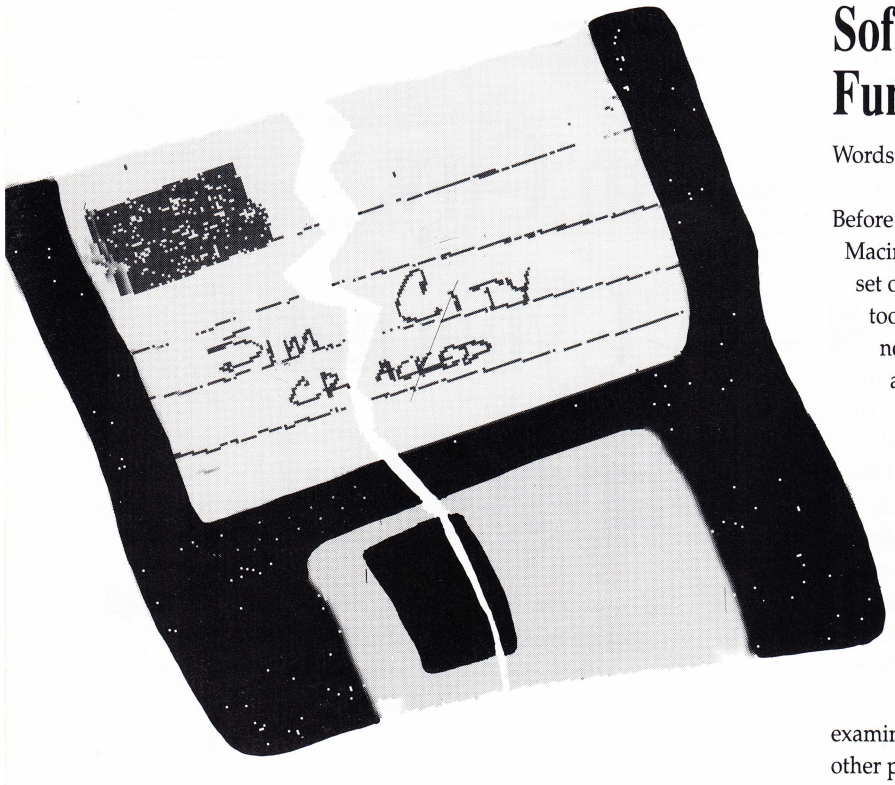
Well, now that I've got industries and workers, they need a market for their wares. I'll put the commercial zones in between the industrial areas and the residential areas. The Sims can shop on their way to and from work.

All right! A couple of years pass by and things are going great, demand is up for everything and Sims are flooding into my city. I'm kept pretty busy building up my three areas and running roads and power to all the new development.

But one day I get a warning. "Traffic in the city is horrible!" Yes, I *had* noticed a lot of Sims on the roads. It's a good thing I was smart enough to leave room to widen the roads when I zoned everything. So I widen the roads, but traffic is *still* bad and, short of demolishing some prime real estate, there's no way to widen the roads any further. Instead, I'll run a road around the long way, sort of like a loop.

Yikes! This is expensive! The roads budget soars sky-high. Not only that, but I've got to put in a police station to curb my growing crime problem and there's no place to put it that'll cover both the industrial areas and the residential areas. They're too far apart. Things get worse and worse. I'm losing money like a sieve and the quality of life is steadily declining. In fact, my city is shot to hell and I've only been mayor a short time.

The moral of the story is crystal clear. Urban planning, even simulated urban planning, is no easy task. The simulation shows that cities need to grow naturally. Segregation of homes, businesses and industry just doesn't work, at least not the way I applied it. SimCity teaches you one other important lesson in urban planning. You'll pay for your oversights. Think



Cracking Mac Software for Fun & Profit

Words from an Expert

Before you get started cracking Macintosh software, you need a set of hardware and software tools. First and foremost, you need a knowledge of the assembly language applicable to the machine your software runs on. On the Macintosh, this means Motorola 68000 assembly. Second, you need the assembly-level debugger, Macsbug.

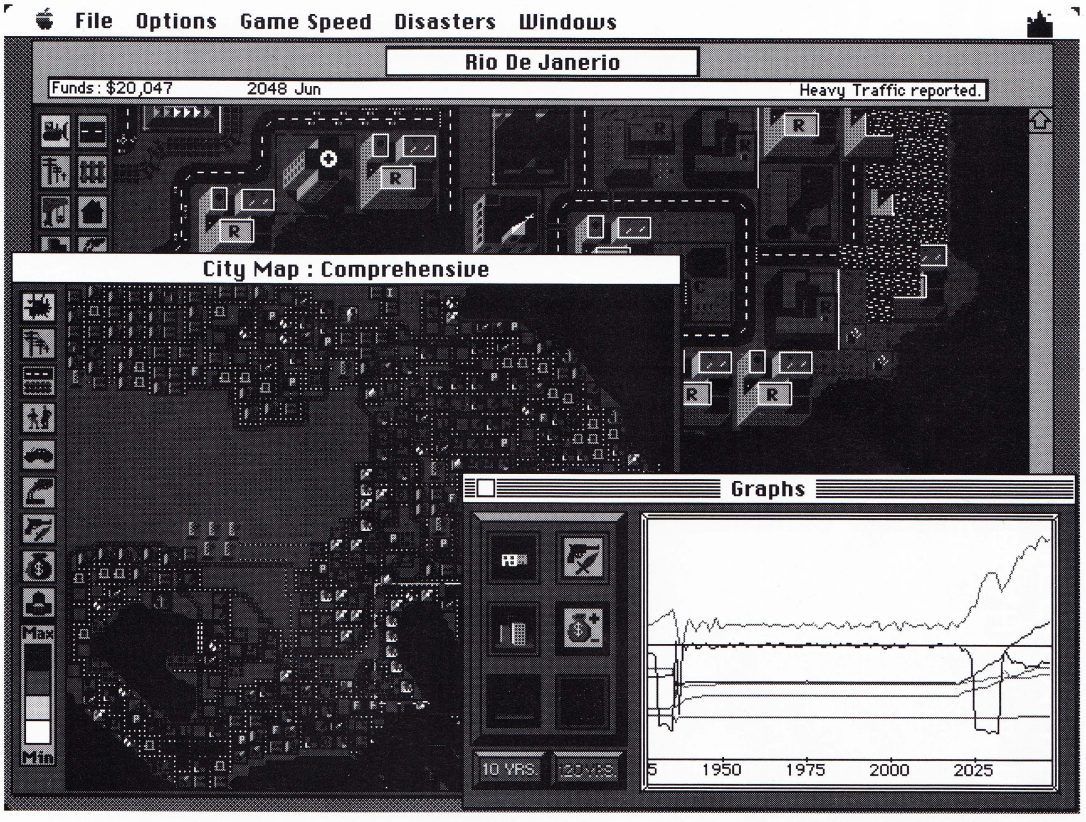
Macsbug allows you to examine and change code in other people's programs. Once you've modified the code to ignore the copy protection, you'll need a disk editor (such as Norton Utilities) to change the code on the disk. This is to permanently remove the copy protection. An alternative to the disk editor, ResEdit, will allow you to change data resources in the program, including code. Both Macsbug and Resedit are available from Apple.

Looking specifically at the SimCity protection, the first thing to note is it's a manual rather than disk-based protection. Instead of reading some data from its original disk in a non-standard format, it asks the user to enter a random word from the user manual. This type of protection is easier to crack. You can simply look for the code that generates a random number to use as an index in its table of manual keywords. Changing this random number to a constant will cause the program to ask for

ahead and try to think of *everything*.

The Future of Simulations

Computer simulations have come a long way in the past few years. It's now practical to simulate a complex process (like urban planning) on your home computer. If SimCity isn't complex enough for you, Maxis will soon be releasing a new simulation that models the entire earth from its formation to the evolution of intelligence. With desktop supercomputing coming up in the next few years, the simulations will get more realistic and detailed. The next decade will also be bringing a new generation of communication capabilities to the average home, so these realistic simulations will become multi-user. At that point, the line between simulation and reality will probably start to blur. M



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the same word every time it runs. Also, since the program has to stop and wait for the user to enter a keyword, manual protection provides us with an easy way to locate the copy protection code in the memory.

So the first task is to find the code that asks for the password. (This is actually a number from the cheat sheet.) The most obvious way to do this is to have the debugger stop on the execution of the GetIText ROM call. This is what programs typically use to get at the text a user has entered in a dialog box. Unfortunately, this doesn't work with SimCity. Another approach is to trap the TEKey ROM routine. This is called to put text into a text edit field on the screen when a user presses a key. This worked fine with SimCity, stopping the program in a routine called "GetCP." Bingo! GetCP = Get Copy Protection.

Now that the program is stopped, you can look at the code and see what's happening. In SimCity, the first thing you'll notice is that the GetCP routine isn't doing the real work. It's just displaying the number. Using the "sc" command in Macsbug, you can crawl back up the stack and see that GetCP is called by DoProtec, another obvious name. Looking through DoProtec, you notice a call to TickCount (at offset 76, hexadecimal). This is a good sign. Programs that use random numbers often use the value of TickCount (the number of "ticks" since the system was booted) to initialize the random number generator. A little further down in the code, at offset 82, there is a call to GRAND (generate random number).

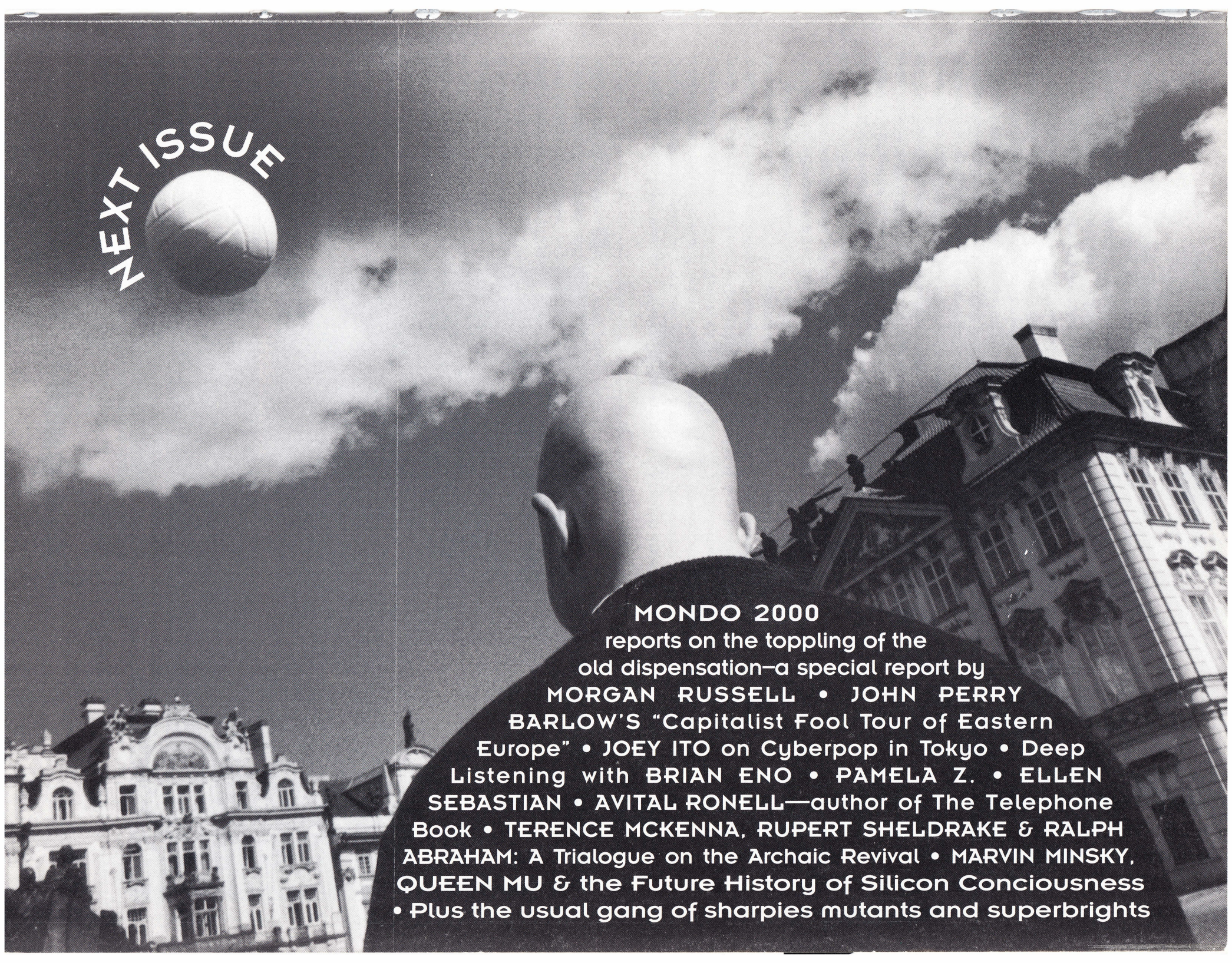
GRAND returns a random number in register D0. Simply set D0 to zero after GRAND is called, and you've removed the random element from the copy protection. A few strokes with the debugger shows you the hex codes for the instructions that move the random number to the location where it's stored. Using a disk editor, you can alter it to move a zero to that location. Now the program will always ask for the first city on the cheat sheet (Mexico City, in this case). If you want to be really fancy, change the dialogue so that instead of asking "Please enter city population," it prompts you "Please enter NNNN" where "NNNN" is the number on the cheat sheet for the population of Mexico City. Now you can throw away the cheat sheet and save your eyesight.

Protection methods vary wildly in different programs. Disk-based protection is an old staple. It relies on non-standard data written to the program's original disk. This can then be read back in the program to make sure it's running from an original and not a copy. In this case, you simply make the program *believe* it read the data from the disk correctly, even though it's no longer in the non-standard format.

Some simpler protection schemes rely on date/time stamps that cause a program to stop executing after a certain date. To remove these, simply search for code that accesses the computer's built-in clock and make the program think it's the day before the expiration date.

There are other, more elaborate, schemes that encrypt the program code on the disk and only decrypt it when the program is run from the original disk. Though not impossible, these are much harder to crack. The Expert will defer these 'til a future lesson.

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• Plus the usual gang of sharpies mutants and superbrights

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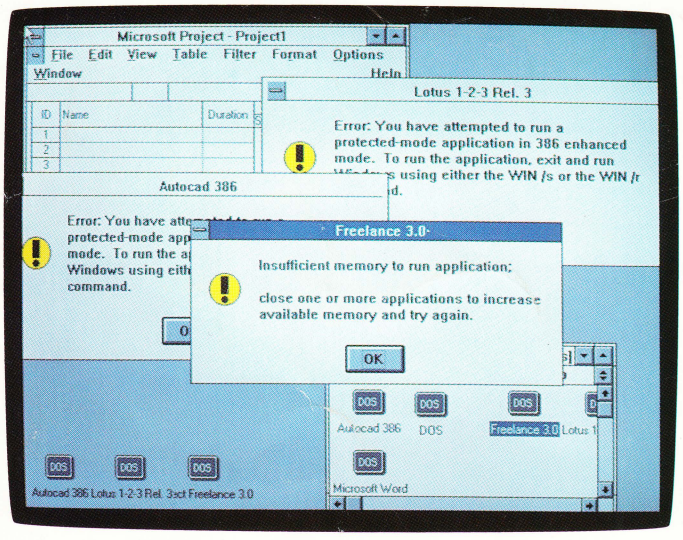
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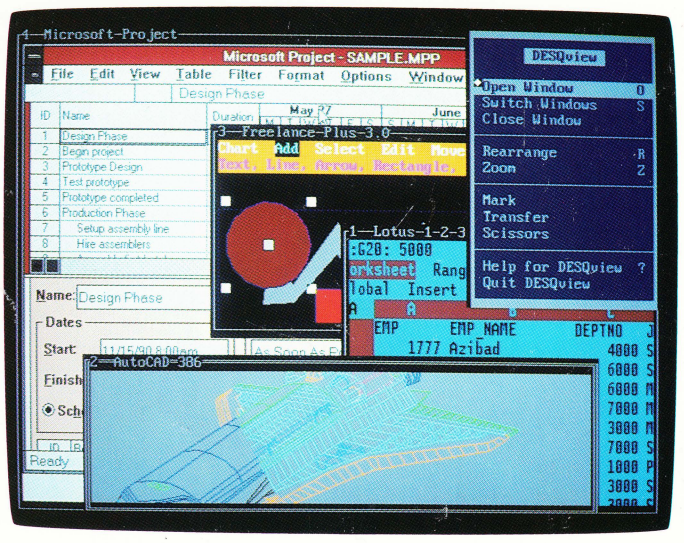
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Quarterdeck

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This comparison was made using a system like the one you might run: Both shots show an ALR FlexCache 33/386 running DOS 3.3 with VGA display adaptor, Novell NetWare v3.01 Rev. A, with IPX/SPX v3.01 Rev A, Microsoft Mouse 7.00, and Microsoft SMARTDrive v3.03 disk cache. Buffers were set to 20. For the Windows screen, we ran Microsoft Windows 3 HIMEM.SYS and EMM386.SYS. For the DESQview screen, we ran QEMM 386 v5.1.

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